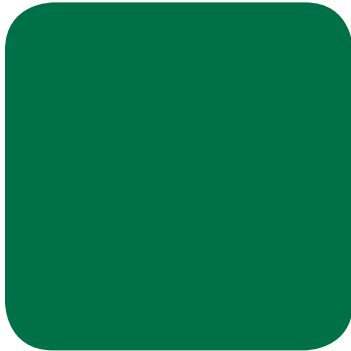




# DELTA COLLEGE

2010-2011 CATALOG





<b>Mailing Address:</b>	1961 Delta Road University Center MI 48710
<b>Telephones:</b>	(989) 686-9000 Switchboard (989) 495-4000 from Midland/Auto Attendant (989) 758-3400 from Frankenmuth, Reese, Birch Run, Vassar/Auto Attendant (800) 649-3777 Michigan Relay Service for the Hearing Impaired
<b>FAX:</b>	(989) 686-8736
<b>Contact us on the Internet:</b>	<a href="http://www.delta.edu">www.delta.edu</a>
<b>Online Catalog:</b>	<a href="http://www.delta.edu/catalog/">www.delta.edu/catalog/</a>
<b>24 Hour Weather Information:</b>	(989) 686-9179

Delta College personnel made every reasonable effort to determine that everything stated in this catalog was accurate at the time it was printed. Courses and programs offered, tuition and fees, services, and the academic calendar, together with other matters contained herein, are subject to change without notice by Delta College for reasons related to student enrollment, level of financial support, or for any other reason, at the discretion of the College. Delta College further reserves the right to add, amend, or repeal any of their rules, guidelines, policies and procedures. Although the provisions of this catalog are not to be regarded as a legal contract, students enrolled at Delta College are responsible for all regulations in this catalog as well as additions or changes to regulations as they are posted or printed in other College publications.

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## Welcome to Delta College

It was our aim, as we prepared this catalog, to provide you with a tool that will be of help to you throughout the time you spend with us at Delta College pursuing your educational goals. We hope you will find it useful, whether you are a new student, a returning student, or a member of the community involved in our various outreach activities. This Table of Contents tells you what is covered in each section of this catalog. If you are looking for a specific topic, check the Index on page 238, where you should find that topic listed, along with the page on which you will find the information. If you come across a term you don't understand, check page 230 for Definitions of College Terms. If you can't find information important to you or you find something confusing, stop in at the Admissions Office, D101, and talk with the staff, or click [www.delta.edu](http://www.delta.edu). They will be able to clarify for you or direct you to the appropriate staff person for an answer, and they will pass on to us anything you think should be added to or changed in this catalog.





**Arts and  
Communication**



**Section I**

**Welcome**



# Welcome

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Delta College - often referred to as one of America's leading community colleges - promotes academic excellence, and is known for exemplary programs, technological innovation, community leadership, and graduates who make a difference.

You will find a personalized learning experience unlike any other. Delta's talented and dedicated faculty and staff will help cultivate your individual talents and potential - all within a state-of-the-art interactive environment.

We are proud of the fact that this institution is important to the economic well being of the region. Delta graduates are everywhere. Nurses, teachers, doctors, skilled tradesmen, business leaders, people just like you, who come to Delta with a dream to succeed in life. More than 86 percent of Delta graduates stay in Michigan, and more than 61 percent reside in the Tri-Counties.

In addition to our quality academic programs, Delta offers the region other learning opportunities through Quality Public Broadcasting, the Planetarium, Corporate Services and LifeLong Learning. Please take advantage of all we have to offer.

I trust you will enjoy your Delta experience. And on behalf of our Board of Trustees, students, faculty, staff and administration, welcome to Delta College.

Dr. Jean Goodnow  
President

# Accreditation and Membership



## Delta College is accredited by The Higher Learning Commission A Commission of The North Central Association of Colleges and Schools

30 N. LaSalle Street, Suite 2400  
Chicago, Illinois 60602-2504  
800-621-7440



On the web: [www.ncahigherlearningcommission.org](http://www.ncahigherlearningcommission.org)

Approved by the Michigan Department of Education

## Accrediting/Approving Agencies

**Automotive Service Technology:** National Automotive Technicians, Education Foundation, 101 Blue Seal Drive, Suite 101, Leesburg, Virginia 20175, 703-669-6650

**Criminal Justice:** Michigan Common Law Enforcement Standards (MCOLES), 7426 N. Canal Rd, Lansing Michigan 48913, 517-322-1417

**Dental Assisting and Dental Hygiene:** American Dental Association, Commission on Dental Accreditations, 211 East Chicago Avenue, Chicago, Illinois 60611

**Diagnostic Medical Sonography:** Commission on Accreditation of Allied Health Programs, 35 East Wacker Drive, Suite 1970, Chicago, Illinois 60601-2208, 312-553-9355

**Nursing: LPN and RN:** Michigan Board of Nursing, Bureau of Health Services, P.O. Box 30670, Lansing, Michigan 48909-8170; National League for Nursing Accrediting Commission, 61 Broadway, New York, New York 10006, 800-669-1656

**Physical Therapy:** American Physical Therapy Association, Commission on Accreditation in Physical Therapy Education, 1111 North Fairfax Street, Alexandria, Virginia 22314, 703-706-3245

**Radiologic Technology:** Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Drive, Suite 2850, Chicago, Illinois 60606-3182, 312-704-5300

**Respiratory Care:** Commission on Accreditation of Allied Health Education Programs: 35 East Wacker Drive, Suite 1970, Chicago, Illinois 60601-2208, 312-553-9355

**Surgical Technology:** Commission on Accreditation of Allied Health Programs: 35 East Wacker Drive, Suite 1970, Chicago, Illinois 60601-2208, 312-553-9355

**Water Environmental Technology:** Michigan Department of Natural Resources/Operator Training, Mason Building, Seventh Floor, P.O. Box 30711, Lansing, Michigan 48909, 517-373-1214; and Michigan Department of Public Health/Water Division, Sixth Floor, Lewis Cass Building, 320 South Walnut, Lansing, Michigan 48913, 517-373-3500

Students wishing to review documents pertaining to accreditation should contact the Office of the Vice President of Instruction and Learning Services, Office B131, phone: 989-686-9298.

## College Memberships

American Association of Collegiate Registrars and Admissions Officers (AACRAO)

American Association of Community Colleges (AACC)

American Chemical Society

American Council on Education

American Council of International/Intercultural Education (ACIIE)

American Management Association

American Math Association for Two Year Colleges

American Purchasing Society (APS)

Association for the Advancement of Sustainability of Higher Education (AASHE)

Association of Higher Education Facilities Officers

Bay Home Builders Association

Community College Humanities Association

Continuous Quality Improvement Network (CQIN)

Educational Teleconsortium of Michigan

Fulbright Association

Great Lakes Process Technology Alliance

League for Innovation in the Community College

Learning Resources Network

Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO)

Michigan Association of Continuing Education & Training

\*Michigan Campus Compact

Michigan Community College Association (MCCA)

Michigan Community College Business Officers Association

Michigan Community Colleges Chief Academic Officers (MCCCAO)

Michigan Community College Community Service Association

Michigan Community College Student Services Association

Michigan Community College Virtual Learning Consortium

Michigan League for Nursing

Michigan Liberal Arts Network for Development

Michigan Occupational Deans' Administrative Council

Michigan Public Purchasing Officers Association (MPPOA)

National Association for College & University Attorneys

National Association for Community College Entrepreneurship (NACCE)

National Association of College and Auxiliary (NACAS)

National Association of College and University Business Officers

National Association of College Stores (NACS)

National Association of Educational Procurement (NAEP)

National Association of Student Aid Administrators

National Collegiate Honors Council (NCHC)

National Council for Occupational Education (NCOE)

National Council for Staff, Professional & Organizational Development (NCSPOD)

National Institute For Staff & Organizational Development (NISOD)

National League for Nursing Accrediting Commission

National Network of Health Career Programs

National Partnership for Careers in Law, Public Safety, Corrections & Security

Society of College & University Planners

Society for Manufacturing Engineering

Valley Library Consortium

## Non-Discrimination Statement

It is the policy of Delta College not to discriminate in employment, education, public accommodation or public service on the basis of religion, race, color, national origin, age, sex, marital status, sexual orientation, gender identity, height, weight, arrest record, veteran status, disability, or other classifications as required by applicable U.S. federal, state or local law. Direct inquiries to the Equity/Compliance Officer, Delta College, Office J101, 1961 Delta Rd., University Center, MI 48710, telephone 989-686-9512, or email: [equityoffice@delta.edu](mailto:equityoffice@delta.edu).



# Introducing Delta College

## Delta College Begins

Delta College has continued, without interruption, the educational opportunities that were previously provided by Bay City Junior College. In the mid-1950's, as the demand for education beyond high school increased in the tri-county area, the percentage of students attending Bay City Junior College from outside the K-12 Bay City Public School District steadily increased. The enrollment was approximately 50 percent non-resident, with about 40 percent of the enrollment coming from Saginaw. Early in 1955, seven community leaders from Bay, Midland and Saginaw met to discuss the possibility of a tri-county college. Their interest and action prompted the following developments:

1955: Organization of the Tri-County Committee of 300 formed to study the needs of higher education in the Saginaw Valley area.

1956: The final report of the Committee of 300, outlining the need to establish and finance a new college, was received.

1957: Legislation was submitted to the State of Michigan Legislature to finance and establish a new institution of higher education.

1957: Voters of Bay, Saginaw, and Midland counties formed a community college district under Act 182 of the Public Acts of 1957 and authorized a levy of 1.5 mills to construct and operate a college.

1958: Bonds were sold to provide the financial structure for Delta College and campus construction began.

1959-61: Members of the faculty and staff of Bay City Junior College assisted in planning for the new college. Many of the Bay City Junior College faculty, students, and staff became part of the new college as Bay City Junior College operations were assimilated into Delta College.

1961: Delta College opened.



## College Locations

The College main campus is located on a 640-acre campus complex in Bay County bordered by Hotchkiss, Mackinaw and Delta Roads (please see maps at the back of this catalog). Noted for its beautifully-landscaped center garden, the College has miles of nature trails, running and fitness trails, tennis courts, and archery and golf putting areas, as well as a covered bridge. The natural surroundings of Delta College positively enhance the learning process of students. The main campus site, at University Center, Michigan, lies almost midway between the three counties' major cities of Saginaw, Bay City, and Midland. This triangle forms the heart of the Saginaw Valley area which is drained by the Saginaw River and its tributaries, northward to the Saginaw Bay and Lake Huron. Bay County adjoins the Saginaw Bay, an important recreational area and waterway whose ports are part of the St. Lawrence Seaway system.

Delta College has major centers in each of the three counties: Delta College Planetarium and Learning Center in Bay City; Delta College Midland Center; and the Ricker Center in Saginaw. The tri-county area is one of the major concentrations of population within the state. The 2000 population census reports an area population of approximately 399,320. Sixty-three percent of the people are classified as urban residents, with 44 percent residing within city limits.

## Accreditation

Delta College is accredited by The Higher Learning Commission, A Commission of the North Central Association of Colleges and Schools (NCA). Initial accreditation was granted the College in October, 1962 by the Michigan Commission on College Accreditation. A status study to prepare for candidacy was submitted to the NCA in May, 1964, as a first step toward regional accreditation. College officials were notified in July, 1966, that the College had been accepted as a candidate for accreditation based on a report of a NCA visitation team. The Self-Study Report was completed in May, 1967, and accreditation was granted in April of 1968. NCA has subsequently reaccredited the College in 1973, 1984, 1993, and again in 2003. The College has also obtained approval to offer all Associate degrees online and all online degrees facilitated by The Michigan Community College Virtual Learning Collaborative. For inquiries regarding accreditation, contact The Higher Learning Commission, A Commission of the North Central Association of Colleges and Schools, 30 North LaSalle Street, Suite 2400, Chicago, Illinois 60602-2504; telephone 800-621-7440; fax 312-263-7462; or access the Web site at [www.ncahigherlearningcommission.org](http://www.ncahigherlearningcommission.org).

Several career academic programs also have received additional accreditation status from their corresponding professional boards, councils, or regulatory groups.

## National League for Innovation

Delta College is a charter member of the National League for Innovation in the Community College. The League is comprised of 19 League Board Member college districts with 56 campuses, enrolling more than 750,000 students. Additionally the League has over 750 colleges who have Alliance membership. Delta's membership is significant recognition that it is devoted to the improvement of learning through experimentation and innovation. The League places a strong emphasis on research, evaluation, and dissemination of information on innovations. In this way, potentially valuable new approaches to instruction are made known and an opportunity is provided to judge their suitability for use at other colleges. Participation in League activities enables Delta to adapt and adopt those innovative practices which have proved effective elsewhere, while sharing the results of its own innovations with colleges in other districts. This means that residents of all ages in the tri-counties have the opportunity to share in the benefits of improved instruction and services provided by the College.

# Profile of Our Students



When Delta College opened its doors in September, 1961, there were 1,700 students, whereas in the Fall Semester of 2009 11,299 academic and skilled trades students were enrolled in courses and programs on the Campus and in neighborhood centers. Who are these students and why do they enroll at Delta? Actually, there is no Delta College student stereotype. Students differ considerably in their ethnic, social, and economic backgrounds and their educational goals. Most students (84.3%) reside in the tri-county district and more students are enrolled on a part-time basis than those attending full-time because most students are also working full or part-time. Some are rich, some are poor, most are neither, but approximately two-thirds of students enrolled for six or more academic credits receive some form of financial aid. Some have precise career plans while others want to explore before they decide; some are taking classes for personal enrichment reasons. What most have in common, though, is that they are seeking to learn and improve their lives. Over the years, students have been asked about their reasons for choosing and attending Delta and the five major reasons given have been: location of Delta (close to home and/or work); curriculum or programs offered; low costs; course work relevant to goals; quality of instruction.



## The diversity of students at Delta College:

### Class Designation

Freshmen .....	57.6%
Sophomores .....	42.4%

### Student Age Distribution

19 years old and under .....	31.3%
20-24 .....	31.8%
25-29 .....	12.7%
30-44 .....	17.9%
45 and over .....	6.3%

### Gender

Females .....	54%
Males .....	46%

### Geographic Residences

Saginaw County .....	42.5%
Bay County .....	26.7%
Midland County .....	15.1%
Other Michigan Counties .....	15.6%
Out of State .....	0.1%

### Ethnic Backgrounds

Caucasian .....	80.8%
African-American .....	8.7%
Hispanic .....	3.9%
Not designated .....	2.9%
Multi-racial .....	2.1%
Asian .....	0.8%
Native American .....	0.5%
International .....	0.3%

### Attendance Distribution

Day hours only .....	23.1%
Evening hours only .....	11.2%
Weekends only .....	0.2%
Telecourse/Internet only .....	4.8%
Combinations of above .....	60.7%

### Program Choices

Career Education Programs .....	59.5%
Transfer Programs .....	28.1%
Deciding .....	7.0%
Guest and Dual Enrolled .....	4.9%
Personal Enrichment .....	0.5%

*Figures based on Fall Semester 2009 (pertains only to students enrolled in academic courses).*



# Mission, Values, Principles, Vision

---

## Mission Statement

Delta College is a responsive, dynamic community college. We educate, inspire, challenge and support a diverse community of learners to achieve academic, professional and personal excellence.

The College Mission reflects our Values.

## Values Statement

Delta College is a diverse learning-centered community based on integrity and respect. From a foundation of leadership, we use innovation and teamwork to achieve excellence.

**Diversity:** We actively promote, advocate, respect and value differences. We foster a welcoming environment of openness and appreciation for all.

**Integrity:** We are committed to honesty, ethical conduct and responsibility.

**Respect:** We stand for trust, caring, loyalty and academic freedom.

**Excellence:** We support outstanding achievement in our students, employees and communities. We have a passion for quality and strive for continuous improvement.

**Leadership:** We create and communicate inspirational visions for results. We are accountable to our communities.

**Innovation:** We rejoice in creative change. We are flexible, agile and risk-taking.

**Teamwork:** We foster communication and collaboration across boundaries and support shared governance.

**Learning-centered community:** We are an engaging, inclusive, diverse learning organization. We focus on academic excellence, civic responsibility and community leadership.

## Guiding Principles

The implementation of our College Mission and its underlying Values are supported by certain Guiding Principles.

Based on our Mission and Values Statements, Delta College is committed to:

- providing a range of programs, opportunities, and experiences that enrich the lives of the residents of our community
- continuously improving and regularly measuring the quality of all of our programs and services
- accepting the challenge of our open door policy by providing programs and services appropriate to our students' needs and backgrounds
- providing services to help students overcome obstacles that impede the achievement of their educational goals
- working with K-12 districts, other colleges and universities, and business and industry to share and respond to each others' needs
- creating an environment that fosters appreciation and respect for the uniqueness of each individual
- expanding our students' cultural and global awareness
- the free exchange of all ideas for their own sake as well as for their potentially practical applications
- providing a work environment which supports the professional development of all College employees
- shared governance, understanding that we are all members of the same College community with the privilege of ownership and the obligation of participation
- employee involvement in the community.
- promoting learning, actions and practices that incorporate social, environmental and economic sustainability in our communities.

## Our Vision For Delta College

Delta College is our communities' first choice to learn, work, and grow.



**Business, Management,  
Marketing & Technology**



**Section II**

# **Enrollment**





# Academic Calendar 2010-2011

Deadline/Activity	Spring - Summer '10 Semester 14 Weeks	Spring '10 Session 7 Weeks	Summer '10 Session 6 Weeks	Fall '10 Semester 15 Weeks	Winter '11 Semester 15 Weeks	Spring - Summer '11 Semester 14 Weeks	Spring '11 Session 7 Weeks	Summer '11 Session 6 Weeks
<b>Applying for Financial Aid</b>	Apply 6 to 8 weeks prior to the term in which you intend to enroll.							
<b>Admission</b>	Continuous							
<b>District Status Change</b>	One Week Before Your Registration							
<b>Readmission for Registration</b>	March 1	March 1	March 1	March 16	Oct. 12	March 2	March 1	March 2
<b>Academic Classes Available on My Delta</b>	Early January	Early January	Early January	Early February	Early October	Early January	Early January	Early January
<b>Registration Begins<sup>1</sup></b>	March 15	March 15	March 15	March 30	October 26	March 16	March 16	March 16
<b>Weekend Classes Begin</b>	May 8	May 8	July 10	Aug. 28	Jan. 8	May 7	May 7	July 9
<b>First Day of Semester<sup>2</sup></b>	May 8	May 8	July 6	Aug. 28	Jan. 8	May 7	May 7	July 5
<b>Add Without Instructor Signature<sup>2,4</sup></b>	Before Class Begins							
<b>Offset<sup>2</sup></b>	25th Calendar Day from Start Date							
<b>100% Refund<sup>2</sup></b>	7th Calendar Day from Start Date							
<b>50% Refund<sup>2</sup></b>	8th through 11th Calendar Day from Start Date							
<b>Audit<sup>2,3</sup></b>	Last Day of 50% Refund Period							
<b>Drop/No Grade<sup>2,3</sup></b>	Last Day of 50% Refund Period							
<b>Last Day to Apply for Graduation</b>	Three months before your expected graduation date							
<b>Pass/No Credit<sup>1,2,3</sup></b>	Aug. 2	June 21	Aug. 9	Nov. 23	April 8	July 28	June 20	Aug. 8
<b>Drop/ "W", "WI"<sup>2,3</sup></b>	Aug. 2	June 21	Aug. 9	Nov. 23	April 8	July 28	June 20	Aug. 8
<b>Incomplete Deadline<sup>3</sup></b>	Dec. 1	Dec. 1	Dec. 1	Apr. 1	Dec. 1	Dec. 1	Dec. 1	Dec. 1
<b>Validations<sup>1</sup></b>	May 8 - Aug. 16	May 8 - Aug. 16	May 8 - Aug. 16	Aug. 28 - Dec. 20	Jan. 8 - Apr. 29	May 7 - Aug. 15	May 7 - Aug. 15	May 7 - Aug. 15
<b>Holidays: No Classes</b>	May 29-31 July 4-5	May 29-31	-----	Sept. 4-7 Nov. 24-28	Mar 7-12 Apr. 24	May 28-30 July 4	May 28-30	---
<b>Last Day of Semester<sup>2</sup></b>	Aug. 16	June 28	Aug. 16	Dec. 19	Apr. 29	Aug. 15	June 27	Aug. 15
<b>Grades Due</b>	Aug 18	June 30	Aug 18	Dec 21	May 3	Aug 17	June 29	Aug 17

## NOTATIONS

<sup>1</sup>Dates subject to change. Complete registration information, including Special Registration dates for entry into restricted enrollment programs is listed in each semester's Course Guide booklet and online at [www.delta.edu](http://www.delta.edu). See Section III, Programs, Validation Procedures.

<sup>2</sup>Some courses begin and end other than these dates; see each semester's Course Guide booklet. Deadline dates apply only to regular semester/session classes; check with the Registrar's Office for deadlines for these courses.

<sup>3</sup>For grading policies, see Section IV, Academic Policies and Information, Grading System.

<sup>4</sup>Exceptions: Distance Learning Courses require instructor permission after the **start date** of class; open entry/open exit courses **do not** require instructor permission after the start date of the course.

Non-Credit Classes: Registration dates, times and procedures are different from above; consult the LifeLong Learning Center brochures published each semester.



## Admission Policy and Procedures

Delta College is open to all individuals included in any one of the categories listed below. Admission to Delta College does not ensure enrollment in all courses or program areas. Many courses have prerequisites; some programs have additional admission requirements. Academic programs of study that require specific prerequisites or eligibility requirements are outlined in Section III, Programs.

### Regular Admission

- graduate of an accredited high school
- non high school graduate whose high school class has graduated
- home school graduate at least 17 years old
- person with an official General Education Development (GED) credential (certificate/diploma)
- person from another country entering the U.S. for college educational purposes under an authorized student visa approved by Delta College

### Conditional "Special" Admission (must reapply each semester)

- guest student from another college/university
- home school graduate under age 17
- student currently enrolled in secondary level accredited school or home school

A committee consisting of the Dean of Faculty, Dean of Student and Educational Services, and the Director of Admissions may make exceptions to this policy based upon the individual having the ability to benefit from the College's educational programs.

Note: If you do not have a high school diploma or have not successfully completed the GED, you may be restricted from receiving federal financial aid if "ability to benefit" criteria are not met. We encourage you to contact the Admissions Office, Financial Aid Office, or the Assessment/Testing Services Office for detailed information concerning "ability to benefit" criteria.

### Admission Dates

Although Admission Applications are accepted and processed continuously, we encourage you to submit your Application preferably 6-8 months, but at least 30 days, prior to your enrollment period. If you plan to request financial aid, it is essential for you to apply for admission and for financial aid 8 to 10 weeks prior to registration.

Our traditional starting dates are:

- Fall Semester (late August/Early September)
- Winter Semester (early January)
- Spring Session (early May)
- Summer Session (early July)



On the Web: [www.delta.edu](http://www.delta.edu)

## Admission Procedures

Admission fee: \$20 (one-time, non refundable)

You will be admitted at Delta College as:

### Regular Admission

1. First Time In College: If you have not previously attended any college or university prior to enrolling at Delta College.
2. Transfer: If you have attended another college or university prior to enrolling at Delta College.
3. Re-Entry/Readmit: If you have not registered for classes at the College for two academic years or more. (No admission fee required if previously admitted after July 1998.)

### Conditional Admission (must reapply each semester)

1. Guest: If you are enrolled at another college or university and desire concurrent admission.
2. Dual Enrollment/Fast Track: If you are enrolled in grades 9-12 and approved by your high school counselor and/or principal.
3. Special Enrollment (Home School/Junior High/Other): If you are "academically qualified" this status provides a parallel route for you to enhance your present curriculum, enrich your academic experience, and earn college credit while doing so.

Delta College complies with applicable federal and state laws prohibiting discrimination, including Title IX of the education amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990 and the Michigan Handicapper's Civil Rights Act.

Completed Admission applications, along with the admission fee if applicable, must be returned to the Admissions Office. Please review the following admission categories and follow the procedures outlined.

1. **High School Seniors:** If you plan to enroll the summer or fall after your June graduation, you need to complete an Admission's Application and give it to your high school counselor or principal. Ask your high school to send your application, along with your current transcript to the Admissions Office. Be sure to request that a final transcript be sent upon your graduation.
2. **New Students/Adults out of High School/Transfer:** Complete an Admission's Application, include the admission fee, and return it to the Admissions Office. You need to request from each previously attended high school, education center, and/or college/university a copy of your *official transcript* be sent directly to the Registrar's Office. Any transcript possessed by the student will be considered non-official.

A photocopy of **one** of the following **must** be submitted with the application to complete the package for residency verification.

- a. Drivers License reflecting the current address of the bearer or Secretary of State Personal Identification Card.
- b. Voter Registration Card reflecting the current address of the holder.
- c. Current property tax receipt for the primary place of residence.
- d. Other legal documents such as court-issued guardianship papers.

Note: In order to receive financial aid, you must be in a degree or certificate program.

3. **Guest Students:** If you are attending another Michigan college and wish to take Delta courses on a Guest status, you must complete Part I of the *Michigan Uniform Undergraduate Guest Application* (available

at your current institution or from Delta College or online at [www.delta.edu](http://www.delta.edu). Ask the Registrar at your college to complete Part II and to forward it to Delta's Registrar's Office. Be sure to check with your current institution to determine if your Delta courses will directly satisfy requirements. Upon the completion of your Delta courses you will need to request an "official" Academic Transcript be sent to your home institution.

4. **Re-Entry/Readmit Students:** If you have not registered for classes at the College for two academic years or more you need to be readmitted. Re-entry may be accomplished by completing an Admissions Application, available from the Admissions Office or on-line at [www.delta.edu](http://www.delta.edu). You are encouraged to see an advisor or counselor prior to registering for classes. Individual assessment also may be recommended.
5. **Dual Enrolled/Fast Track Students:** If you plan to enroll in Delta courses and in high school courses during the same semester, you need to submit a Dual Enrollment Application for each semester in which you intend to enroll. This application, available at your high school, needs to be signed by your parent and high school counselor or principal. Request that your high school send a current copy of your transcript to the Admissions Office.
6. **Special Enrollment Students:** If you are at least 14 years old and attend junior high or high school or are home schooled you may be admitted for one semester at a time under Special Enrollment. This program is provided to supplement your educational plans and to afford educational enrichment in courses and academic areas not available in the student's school or home school setting. You will need to submit a Dual Enrollment Application. The application will need to be signed by your parent and high school counselor or principal (only parent if home schooled). The parent or legal guardian is responsible for all fees, tuition and transportation. You will need to have the ability to read and write at the college level. An assessment exam will be administered to determine your eligibility.

If you are younger than 14 and can demonstrate the academic and social skills appropriate for college-level coursework you may be admitted for one-semester at a time under Special Enrollment. You will need to submit a completed Dual Enrollment Application at least 30 days prior to the beginning of the anticipated semester of enrollment. A letter of support from the school's counselor or principal or your parent (if you are home schooled) must accompany the application. You will be required to take a college determined assessment exam for proper course placement. A College committee will interview you (accompanied by a parent or guardian) to determine your eligibility for the course and will make a recommendation to the Director of Admissions.

7. **International Students:** If you are not a U.S. citizen or a permanent resident and you are requesting an I-20 form, you need to complete the International Admissions Application.

## Transcripts

If you are a new student in any category **except Guest**, or if you are a returning student who has attended another college or university since Delta, you need to request immediately that your official transcript be sent to:

**Delta College, Registrar's Office**  
1961 Delta Road, University Center, MI 48710

Official transcripts include: college, university, GED, and adult education course work.

## Acceptance and Evaluation of Transfer Credits From Other Institutions, Training Programs or Examination Programs

1. Only **official transcripts** will be evaluated. Delta College will accept as official transcripts only incoming transcripts that have appropriate signatures and seals and have been mailed directly to the College from an issuing institution. Transcripts in the possession of the student or copies of transcripts or grade reports may be used for academic advising or counseling, but no transfer credits will be posted to the Delta College academic transcript from these documents.
2. Official transcripts should be mailed to the Delta College Registrar's Office from the transfer institution. Transcripts received from a Michigan college or university **at least one month** prior to a registration period will generally be evaluated within two weeks of receipt. More time may be necessary to evaluate transcripts from out-of-state institutions.
3. Credits only, not grades, are accepted in transfer. Grades earned at another school in courses accepted by Delta College are not entered on the permanent Delta academic transcript or calculated in the Delta College cumulative grade point average.
4. A maximum of 38 credits acquired through transfer, training or examination programs may be used toward registration priority.
5. The credit value of each course accepted in transfer will be determined by Delta College; the number of credits will never be greater than the Delta College equivalent course, but the number granted may be fewer than the number of credits received at the transfer institution.
6. Transfer credit granted will be shown on the student's permanent academic transcript.

### A. Regionally Accredited Institutions

Course work completed at a college or university accredited by one of the eight\*Regional Accrediting Associations of Colleges and Schools (See below) will be considered according to the following guidelines:

#### 1. Equivalent Course Work

Freshman and sophomore level courses are accepted in transfer. Higher level credits are accepted if they correspond to a specific course at Delta College. If Delta College does not have a department or area similar to the courses on the incoming transcripts, no credit will be awarded. Academic credit will not be granted for courses below the 100 level. A minimum of a "C" (2.0) grade on a 4.0 scale is required in each course for transfer.

#### 2. Non-Equivalent Course Work

"General Elective" credit will be granted for courses completed with a grade of "C" (2.0) or above on a 4.0 scale that are not equivalent to Delta College courses or disciplines. "General Elective" credit applicable to Humanities, Social Science, Science, or Lab Science will be so noted on the student's Delta transcript. (A student must request that a counselor submit the necessary form to receive this credit).

#### \*Regionally Accredited Institutions:

New England Association of Schools and Colleges, Commission on Institutions of High Education (NEASC-CIHE)

New England Association of Schools and Colleges, Commission on Technical and Career Institutions (NEASC-CTCI)

Middle States Association of Colleges and Schools, Commission on Higher Education (MSA/CHE)

North Central Association of Colleges and Schools, The Higher Learning Commission (NCA)

Northwest Association of Schools and Colleges, Commission on Colleges (NASC)

Southern Association of Colleges and Schools, Commission on Colleges (SACS)

Western Association of Schools and Colleges, Accrediting Commission for Senior Colleges and Universities (WASC-Sr)

Western Association of Schools and Colleges, Accrediting Commission for Community and Junior Colleges (WASC-ACCJC)

## B. Non-Regionally Accredited Institutions

Courses that apply toward a Delta occupational Certificate/Associate degree program will be considered according to the following if they were completed with a grade of "C" (2.0) or above at institutions recognized and approved by the Council on Higher Education Accreditation (CHEA):

1. Transcripts will be forwarded for evaluation of the occupational courses to the appropriate Division Chair or Discipline Coordinator. The following Options are available to the Division Chairs or discipline Coordinators:
  - a. Equivalent Delta College credit may be granted upon review of course outlines, and/or course descriptions, and/or appropriate descriptive materials. It is the responsibility of the student to provide any requested materials to enable proper evaluation.
  - b. Equivalent Delta College credit may be granted after successful completion of Delta College courses at the subsequent level.
  - c. Equivalent Delta College credit may be granted upon demonstration of proficiency via examination, interview, or other appropriate evaluation means as determined by the appropriate Division Chair or Program Director.
  - d. Credit may not be granted.
2. No credit will be granted for General Education courses.

## C. Foreign Institutions

Delta College evaluates foreign institution transcripts after they have been submitted to a foreign evaluating service which will then forward the official results of their evaluation to Delta College for credit evaluation. You may choose to have your transcripts evaluated by any evaluating service, (for example):

- World Education Services, Inc. (WES) [www.wes.org](http://www.wes.org)
- Education Credential Evaluators (ECE) [www.ece.org](http://www.ece.org)

## D. Non-Traditional Credit

### 1. Military credit

- a. All veterans having a certified DD214 form on file in the Veteran Services Office will be granted credit for LW221 and two lifelong wellness theory (LWT) credits.
- b. Veterans who have taken educational programs during military service may, under certain conditions, receive elective credit for that work. The Guide to the Evaluation of Educational Experiences in the Armed Services by the American Council of Education is used to determine these elective credits.
- c. Courses completed at accredited military colleges, such as The Community College of the Air Force, may result in the awarding of transfer credit.

### 2. Certified Training

Academic Credit can be granted for the following types of training programs and exams provided criteria for the award of credit is met.

- a. Certified Professional Secretary Exam
- b. Child Development Associate credential
- c. Current State of Michigan Cosmetology License
- d. Current State of Michigan EMT License
- e. Michigan Fire Fighters Training Council
- f. Current State of Michigan Paramedic License

g. Skilled Trades Journeyman Card

h. First Aid Card

## 3. Correspondence Courses

Credit granted by correspondence from regionally accredited institutions will transfer to Delta College according to the guidelines for equivalent and non-equivalent credit as outlined.

## E. Credit for Prior Learning

You may be granted academic credit for prior learning in many areas of study at Delta College. The Credit For Prior Learning Options are designed for students who have gained, through related work experience and/or training, learning that may be equivalent to the outcomes and objectives taught in actual Delta College courses.

Credit for Prior Learning is assessed by one or more of the following Options:

1. **Credit By Exam (CBE):** comprehensive course challenge examinations that are developed and evaluated by Delta College faculty. If you earn a passing grade on a CBE examination, the course credit(s) will be recorded on your academic transcript. There is a per credit hour attempted fee for all CBE examinations. A CBE may be taken only once per course. Retesting is not allowed. If you are interested in waiver credit, we recommend that you discuss that option with your academic counselor/advisor.
2. **Credit By Portfolio:** an individualized process in which you comprehensively document how your work experience directly relates to the outcomes and objectives of a Delta College academic course. All portfolios are reviewed and evaluated by the faculty member(s) who teach that course. A typical portfolio application includes a current resume, personal manuscript, professional references, and supporting documentation. A non-refundable per credit hour attempted fee must be paid before your portfolio application is submitted to the appropriate Academic Division for consideration. If your portfolio application is approved, the earned course credit(s) will be recorded on your academic transcript.
3. **Credit By Training:** an individualized process in which you earn academic credit for Delta College Training Programs. If you believe that you qualify for this option, contact Assessment/Testing Services.
4. **College Level Examination Program (CLEP) or Defense Activity for Non-Traditional Educational Support (DANTES):** national standardized tests in selected academic areas. Students can earn credit for CLEP and/or DANTES examinations that have been approved by the Academic division(s) as equivalent to specific Delta College courses. The application forms, course equivalents, and minimum passing scores for the examinations accepted by Delta College for academic credit are available from Assessment/Testing Services. There is an examination fee and a non-refundable administration/service fee charged for each examination. You must request that CLEP or DANTES send an official transcript of your examination score(s) to Delta College Admissions Office. Upon receipt of successful examination scores, Delta College Records will record the appropriate credit on your academic transcript.

If you are interested in any of these Credit for Prior Learning Options, please be aware that the following restrictions may apply:

- Credit for Prior Learning is not available in all areas of study.
- Credit for Prior Learning credits may not be transferrable to other institutions.
- Financial Aid cannot be used for Credit for Prior Learning fees.
- You may only apply for credit one time per course.

For additional information, visit ([www.delta.edu](http://www.delta.edu)) or call 989-686-9338.

## F. Articulation Agreements with High Schools and Career Centers

Articulation is a process which links two educational institutions together to help students make a smooth transition from one level of education to the next without experiencing delay, duplication of courses, and loss of semester credits. Delta College is part of a statewide effort to implement the Competency Based Education Articulation of career education programs.

The secondary articulation agreements allow students to receive college credit for instruction received at the secondary school/center for specific occupational courses. Credits articulated will become part of the total number of credits for program completion solely at Delta College. These agreements are signed contracts between the faculty and administrators of both institutions, and are re-evaluated annually. The instructors at the secondary level initiate the process by completing a student articulation application and submitting it to the Articulation Office at Delta College. To maximize counseling services, once a student has been accepted to Delta as an academic student, and has declared a specific course of study other than undecided or general studies, the articulated credit(s) will be posted to the student's transcript. No tuition or fees are charged for articulated credit.

### The schools currently involved are:

Alma High School  
Alpena High School  
Bay Arenac ISD Career Center  
Bay City Central High School  
Bay City Western High School  
Breckenridge High School  
Bridgeport High School  
Bullock Creek High School  
Carrollton High School  
Chesaning High School  
Clare Gladwin RESD  
COOR (Crawford, Oscoda, Ogemaw, Roscommon) Intermediate School District  
Dow High School  
Downriver Career Technical Consortium  
Essexville Garber High School  
Frankenmuth High School  
Freeland High School  
Genesee Area Technical Center  
Grand Blanc High School  
Hemlock High School  
Heritage High School  
Huron Area Technical Center  
Iosco Regional Education Service Agency  
John Glenn High School  
Kingston High School  
Lapeer County Educational & Technology Center  
Mayville High School  
Merrill High School  
Midland High School  
Mt. Pleasant Area Technical Center  
Oakland Technical Center NW Campus  
Ogemaw Heights High School  
Pinconning High School  
Saginaw Career Complex  
Sanilac Career Center  
Shiawassee RESD  
St. Charles High School  
St. Louis High School  
Standish-Sterling High School  
Swan Valley High School  
Tawas High School  
Tuscola Technology Center  
Whittemore-Prescott High School

### For Post-Secondary Articulation information, see Section III, Transfer and Career Education Articulations .

Further information may be obtained from the schools listed above, or from the Delta College Articulation Office, (989) 686-9070, from Midland (989) 495-4000, ext. 9070. More detailed information is published on the Articulation webpages at [www.delta.edu](http://www.delta.edu).

## After You Apply

After you apply you will receive a prompt response to your Admission Application. Applications submitted in person will be processed immediately. Upon acceptance, you will be issued a student number, and further information about assessment, orientation, advisement, and/or registration procedures. After being accepted, most new and some returning students are required to participate in pre-enrollment procedures such as assessment, orientation, and advisement.

## Getting Started

### Step 1: Admission

You have completed the first step when you are accepted for admission and apply for financial aid (if applicable).

### Step 2: Assessment

COMPASS will assess your current Writing, Reading and Mathematics skills. It is not a test that you pass or fail. Your COMPASS scores will determine your course placement and are prerequisites for many courses. COMPASS is computerized and untimed, but takes approximately two hours to complete. Computer skills are not required to take COMPASS. COMPASS is available on a walk-in basis during regular office hours. For more information about COMPASS visit our web page at [www.delta.edu](http://www.delta.edu) or call Assessment/Testing Services at 989-686-9338.

### Step 3: Orientation/eAdvising

You will be provided information regarding your academic program, eAdvising, registration process, how to check your Delta email, as well as taking a virtual tour of campus. Orientation will provide a simulation on how to search for classes, register for a class, add to a waitlist, manage a waitlist and drop classes. Online orientation can be completed any time. Additionally, the orientation can be completed at your own pace. If you exit orientation you are allowed to return to the last module completed. You will be provided information through your eAdvising account in a few business days.

**Exemptions** from Assessment and Orientation will be given only for the following reasons:

- You enrolled at Delta College Fall Semester 1986 or earlier and earned one or more academic credits.
- You earned a minimum score of 20 on the English ACT subtest and a minimum of 19 on the Mathematics ACT subtest. A copy of these scores must be given to the Enrollment Services Office. (This exemption is for assessment only.)
- You are enrolling in five or less credits per semester (three or less credits per Spring/Summer Session) excluding all English, business communications, business computation, and math courses.
- You have earned an Associate degree or higher from a regionally accredited college. An official final transcript or diploma must be sent to the Delta College Registrar's Office.
- You are a transfer student who has successfully completed English composition and math courses equivalent to Delta College courses ENG 111 or OAT 151, and MTH 096 or higher (with a minimum 2.0 GPA). An official copy of your final college transcript must be sent to the Delta College Registrar's Office.
- You are a Guest student from another college. A completed official Guest Application Form is required from your current college or university per semester.

Students who have the necessary documentation for exemption should contact the Delta College Enrollment Services Office to request an exemption.

### Step 4: Registration and Payment

Register for your classes using MyDelta online registration system. Print your registration statement after you register at MyDelta and pay tuition and fees by the payment deadline date. **Financial Aid Applicants Note:** If you have **received your Award Letter** from Delta's Financial Aid Office, you may charge your tuition fee, and books **up to the amount** you were awarded.

## Admissions Advising/Campus Tours

We invite you to call with any questions you may have and especially invite you to make an appointment with an Admissions Advisor. We will discuss pre-enrollment procedures, the financial aid process, and general college information. The Admissions Office phone number is: (989) 686-9093; from Midland/Auburn, phone 495-4000, ext. 9093; or from Birch Run/Frankenmuth/Reese/Vassar, phone 758-3400, ext. 9093.

## International Student Admissions

Delta College welcomes applications for International Admissions and is authorized under federal law to admit and enroll non-immigrant alien students. In order to obtain a visa for entry into the United States on an F-1 Student visa status, you must present to the U.S. consulate abroad a valid passport, proof of sufficient finances, and a completed I-20 form.

After the college has determined that you have met the following conditions, an I-20 form (Certificate of Eligibility) is issued to admitted Delta students. Upon receipt of your I-20, if you do not currently hold an F-1 Visa, you are required to visit <https://www.fmjfee.com/i901fee> for more information about paying your I-901 fee prior to your consular appointment.

1. **Academic Requirements:** You must be 18 years of age or older and have successfully completed a course of study equivalent to high school level. You are required to submit certified copies (in English) of your high school leaving certificate national and international exams, and transcripts, which reflect courses and marks earned during the last three years of high school.
2. **Language Proficiency:** You must demonstrate you are proficient in English to pursue your studies or you must make arrangements to enroll in an English Language Center prior to acceptance. English proficiency means that you speak, write, and read English fluently. Such fluency is necessary to insure your enrollment, proper placement, and success in achieving your educational goals.

You must furnish Delta College with proof of having achieved one of the following:

- A minimum score of 500 on the paper based version of TOEFL (Test of English as a Foreign Language) or 173 on the TOEFL CBT or 61 on the TOEFL IBT
- At least 5.0 on the IELTS
- A minimum score of 69 on the MELAB
- Grade 2A from the STEP-EIKEN program
- Completion of a recognized English as a Second Language program

An additional test and interview may be required to establish English proficiency before enrollment.

3. **Financial Verification:** You are required to submit a completed affidavit of support and a current financial statement from a sponsor and his or her bank, which testifies to the sponsor's willingness and ability to support you while you are at Delta. If your government or an organization does not sponsor you, you must submit a current bank statement, which testifies to the existence of enough funds for school and living expenses in your family's account for attendance. All College tuition is due and must be paid in full at the time of registration. **Loans, scholarships, financial aid, and deferred payments are not available to international students.**
4. **Deadlines:** All documents such as applications, recommendations, official transcripts, financial statements of support, Affidavits, Certificates of English Proficiency, and medical reports must be in the Admission's Office at least **four months** preceding the semester you desire to be admitted.

### • Applying from Home Country

Semester	Application Deadline	Semester Begins
Fall	May	Last week of August
Winter	September	Second week of January
Spring	January	Second week of May

### • Transferring from USA/Canada Colleges

Semester	Application Deadline	Semester Begins
Fall	Mid July	Last week of August
Winter	Early December	Second week of January
Spring	Early April	Second week of May

5. **Medical Insurance:** After arrival and before registering for classes, you must purchase medical insurance with a repatriation clause. Failure to do so or cancellation of the policy will result in you not being able to register for future semesters at Delta and notification will be given to the United States Citizenship and Immigration Services that you are not enrolled.
6. **Verification/Academic Advisor/Orientation/Assessment:** Upon arrival, you must verify visa status, provide a copy of the I-94 card from your passport, and provide a copy of the applicant information from the inside of the passport with the Admission's Office. Orientation and Assessment will be scheduled after arrival and prior to class registration.

For answers to specific questions about enrollment, contact the international student Admissions Advisor by e-mail ([admit@delta.edu](mailto:admit@delta.edu)).

### Important notes:

- Applications for admission to Delta College will be mailed upon request. High school records submitted by friends or relatives on your behalf are not accepted. Official records must be mailed directly to Delta College from your secondary school, college, or the Ministry of Education in your country. A \$20 admission fee (one time, non-refundable) must accompany the application.
- All documents must be original, certified copies and must be accompanied by an official English translation. The principal or registrar of each school or college attended must sign the transcripts. You must not leave your country, language center or college before you receive official acceptance from Delta College.
- Students on an F-1 visa must enroll full-time (at least 12 credit hours per semester, per academic year) at Delta.
- F-1 students must agree to enrollment stipulations as required by federal law. Therefore, F-1 students must indicate their acceptance of these stipulations by signing a contract as part of the admission process, and maintain compliance for each semester of enrollment.

### International Students (all visa classifications except F-1 Student Visa):

International students range from permanent resident aliens to a visitor on any visa from an A visa to an R visa, including refugees and people with asylum status. Certain restrictions may apply depending on which status you may hold in the United States.

- **If you are a permanent resident alien (green-card holder)** and wish to attend Delta you may register either as a part time or full time student. Admission procedures for a permanent resident alien is as follows:

Submit a completed application with a copy of your green card (front and back), and also include a copy of your driver's license or State of Michigan identification.

- **If you possess refugee or political asylum status** in the United States and wish to attend Delta you may register either as part time or full time. Admission procedures are as follows:

Submit a completed application for admission with a copy of your passport (if applicable), appropriate documentation showing your status, and a driver's license or state identification to show where you currently reside.

- **Admission requirements for all other visa holders:**

Submit a completed application for admission with a copy of your passport, I-94 card, and a copy of the visa that you currently hold.



On the Web: [www.delta.edu](http://www.delta.edu)



# Costs

## Delta offers quality education at the most reasonable cost in the tri-county area.

Costs are for the 2009-2010 academic year. Use for estimation purposes only.

### Tuition:

In-District .....	\$79.00 per credit
Out-District .....	\$119.00 per credit
Out-Of-State/International.....	\$172.00 per credit
Course Fees .....	Varies - www.delta.edu
Excess Contact Hour Fee .....	up to \$1,100
Technology Fee .....	\$7.90 per credit
Internet Fee.....	\$20.00 per credit
Early Registration Fee (by the first payment deadline) ..	\$30 per semester
Registration Fee (after the first payment deadline).....	\$60 per semester
Exception: For late start classes, register at least one week before class start date and pay \$30 Registration Fee.	
Admission Fee .....	\$20
Orientation Fee .....	\$ 0
Assessment Fee.....	\$ 0
Transcript Fee - Three to Five Days .....	\$ 0
Library Fee .....	\$ 0
Tutoring Fee .....	\$ 0
Parking Fee (except violations) .....	\$ 0
Student Activities Fee .....	\$ 0
Graduation Fee .....	\$ 0
Diploma Fee .....	\$ 0

### Michigan Community College Virtual Learning Collaborative (vcampus.mccvcl.org)

#### MCCVLC Tuition:

In-District (MCCVLC) .....	\$150 per credit
Out-District (MCCVLC) .....	\$215 per credit
Out-State (MCCVLC) .....	\$280 per credit

**Other Costs:** In addition to tuition and fees, you must be prepared for the other costs incurred when attending college. These include books, supplies, transportation, room and board, miscellaneous personal expenses, child care, and any costs associated with disabilities.

## Residency Policy and Guidelines

Educational costs at Delta College are shared by students, the taxpayers in the Delta College District, and the State of Michigan. Property taxes paid by residents of the Delta College District supplement student tuition and state aid for in-district status students; therefore, the tuition charged legal residents of the Delta College district is the lowest and students who are classified as out-of-state residents are charged the highest tuition. A student's residency classification is established when admitted to Delta College and may only be changed as detailed under No. 4 below.

- 1. Residency Classifications:** A person will pay course tuition according to one of the following classifications of legal residence:
  - a. In-District Status: Legal resident\* of Bay, Midland, or Saginaw counties. (This is the Delta College District)
  - b. Out-of-District Status: Legal resident\* of Michigan but not of the above three counties.
  - c. Out-of-State Status: International students (including Au Pares) and all others not classified within a or b above.

\* A legal resident is one whose permanent, primary residence is where he or she intends to return whenever absent from college. A dormitory or apartment rented only for the period of time during college enrollment is not a permanent primary residence.

- 2. In-District Criteria:** For tuition purposes, an in-district student is an American citizen or permanent resident who can provide legal proof of residence within Bay, Midland, or Saginaw counties for at least three consecutive months immediately preceding the first day

of the semester in which the person plans to enroll. **There are no exceptions to the American citizenship or permanent immigrant status requirement.** Exceptions to the three consecutive months are:

- a. The legal residence of a student under age 18 is that of the parent or legal guardian regardless of where the student may have been living for the previous three months.
- b. The student marries an individual who qualifies as an In-District resident of the Delta College District.
- c. The person is an employee of a business or industrial firm within the Delta College District, AND the employer, by written agreement, agrees to pay directly to the College all tuition and/or fees of the sponsored student for employer-approved classes. If the employer is not directly paying the College for the student's tuition/fees bill, the student will be assessed the appropriate out-of-district or out-of-state tuition rate.
- d. Veterans, whose induction address was within the Delta College District, who enroll at Delta within three months of discharge will be considered to have an In-district Status.
- e. In-District students whose families/spouses move out of the Delta College District during the time they are enrolled may retain their residency status as long as they are continuously enrolled at Delta College (defined as a minimum of one semester in each academic year).
- f. A permanent alien who has filed the Declaration of Intention and has been approved to become a U.S. citizen (green card received), and who can provide proof of Delta College District residency for the previous three consecutive months immediately preceding the first day of the semester in which the individual plans to enroll, may petition for In-District status.

- 3. Proof of In-District Residence:** All students are subject to a check of their residency status at admission and registration. Students furnishing false information will be subject to disciplinary action. The following examples are types of documents which are considered in determining proof of in-district legal residency (All documentation must show valid in-district address dated three months prior to the first day of the semester):

- a. A current/valid Michigan driver's license, Michigan Secretary of State I.D. card, or valid Michigan motor vehicle registration in the student's name indicating a permanent address within Bay, Midland, or Saginaw counties.
- b. A property tax receipt from Bay, Midland, or Saginaw counties.
- c. A current voter registration card indicating an in-district address.
- d. Other legal documents such as court-issued guardianship papers.
- e. Auto, home, or renter insurance statement/policy (dated).
- f. Dated correspondence from a government agency.
- g. Lease Agreement/Rent Receipt(s) that contain address being leased/rented, dates of payment, and signature/address/phone number of the landlord (with proof of drivers license update).
- h. Michigan Tax Return.
- i. State issued professional license/credential (including date/address).
- j. Proof of purchase of property in the district.
- k. Tribal ID card with address.
- l. Utility receipts, (only water/sewer/gas/electrical).
- m. Verification of Military Service.
- n. Military discharge papers showing address to an in-district county.
- o. Dated Veterans card with address.

- 4. Change of Residency Status:** While attending Delta College, students may petition to change their residency classification. Petition forms are available online or in the Registrar's or Admission's Office and must be submitted, with proof of in-district residence (see No. 3 above), at least one week prior to the student's registration date. Students must meet the criteria stated in No. 2. Any adjustments made in tuition due to a change in residency status shall not be retroactive nor changed within a semester.

Note: Guest students from other colleges and international students on a visa should not expect to have their residency status changed while attending Delta College, as the definition of legal resident has not been met. If you have questions regarding residency, please contact the Registrar's Office at (989) 686-9305; from Midland/Auburn, 495-4000, ext. 9305.

# Financial Aid



The Delta College Financial Aid Office (FAO) administers a comprehensive program of financial assistance to help you with the cost of attending college. The Federal government, the state, Delta College, and organizations are sources of assistance if you demonstrate financial need and/or merit. Application forms required to begin the financial aid process are available on-line at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). Forms for the next academic year (August - May) are available the preceding January. You should obtain the pre-application form and follow the application procedures as early as possible. The entire application process may take from four to six weeks. Applications filed less than two months prior to registration may not be processed in time for registration and may be received too late to be awarded some types of aid.

## Application Procedures

1. Apply online at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). Before filing your Free Application for Federal Student Aid (FAFSA) on the web, we recommend that you (and one of your parents) apply for a PIN at [www.pin.ed.gov](http://www.pin.ed.gov). A PIN acts as your electronic signature, and allows you to review your processed application data and make corrections on the web. Accurately answer each question on the FAFSA, indicate Delta's College Code (002251), sign it using your/your parent's PIN(s) and electronically submit your application. This will generate a Student Aid Report (SAR), which will be sent directly to you via e-mail.
2. Once you receive your SAR, look it over carefully to make sure it is correct, as the information on this report will be used to determine your eligibility for financial aid. Corrections can be made online at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). If you need assistance with corrections, please contact the Financial Aid Office.

## Eligibility for Aid

To be eligible for aid you must be a U.S. citizen or permanent resident of the U.S., must not be in default on any student loan and not owe a repayment on any Federal grant. You must, in most cases, enroll and attend at least half-time, maintain satisfactory academic progress as defined by the Delta College Standards of Academic Progress policy, and be enrolled in a program of study leading to a certificate or degree. If you do not have a high school diploma or GED, you must demonstrate your ability to benefit by receiving minimum scores as determined by the U.S. Department of Education on one of the approved tests by the Department. If you do not have a diploma or GED, the ability to benefit applies to you and you should contact the Delta College Assessment/Testing Services Office. **You cannot receive Federal Student Aid at two institutions at the same time.**

Once you have met the eligibility requirements listed above you will be considered for all aid programs administered by Delta, except student loans and scholarships which require a separate application. The financial assistance offered to you may include any of the programs listed on the chart on the following page. You will be notified via your Delta e-mail account regarding the amounts and types of financial aid available based on full-time attendance. Enrollment at less than 12 credits will reduce your award accordingly.

At full-time enrollment, you may receive a maximum of one-half of the annual Pell Grant for which you are eligible in any one semester. If you do not receive Pell Grant for full-time enrollment for both Fall and Winter semesters, you may be awarded up to the unused portion of your Pell Grant for the Spring Semester. Other grants, and work-studies are awarded to Spring Semester applicants, as available.

Stafford Loan eligibility is based partly on the anticipated enrollment status of the applicant. If you register at a status below that which was used to determine your eligibility for the loan, your eligibility will have to be recalculated and your loan may have to be cancelled. Most lenders provide loan funds to Delta College via electronic fund transfer (EFT). If your lender participates in this process, the Student Finance Office will mail your loan funds directly to your address on file with the college after any balance owed has been deducted. Loans are typically disbursed 8 weeks into the semester.

**Every Stafford Loan borrower must complete online Entrance Loan Counseling prior to completing their first Stafford Loan application at Delta College.**

**Loan borrowers may select any participating lender of their choice. Delta College cannot and will not select a lender for students. Delta College provides a list of participating lenders as a courtesy to our students and their families. The list does not include all participating lenders in the loan programs. It includes some lenders that Delta College has found to provide reliability, efficiency, accuracy, attractive borrower benefits and quality customer service.**

## Rights of Financial Aid Applicants

1. You have the right to know what financial aid programs are available.
2. You have the right to know the deadlines for submitting applications for each of the financial aid programs available.
3. You have the right to know how financial aid will be distributed, how decisions on that distribution are made, and the basis for these decisions.
4. You have the right to know how your financial need was determined.
5. You have the right to know what resources (such as parental contribution, other financial aid, your assets, etc.) were considered in the calculation of your need.
6. You have the right to know how much of your financial need as determined by the institution has been met.
7. You have the right to request an explanation of the various programs in your student aid package.
8. You have the right to know the Delta College refund policy.
9. You have the right to know what portion of the financial aid you received must be repaid, the payback procedures, the length of time you have to repay, and when repayment is to begin.
10. You have the right to know how Delta College determines whether you are making satisfactory academic progress and what happens if you are not.

For an explanation of any of the above rights, please come in to the Financial Aid Office and see a Financial Aid Advisor.

## Responsibilities of Financial Aid Applicants

1. You must complete all application forms accurately and submit them on time to the right place.
2. You must provide correct information. In most instances, misreporting information on financial aid application forms is a violation of law and may be considered a criminal offense which could result in indictment under the U.S. Criminal Code.
3. You must return all additional documentation, verification, corrections, and/or new information requested by either the Financial Aid Office or the agency to which you submitted your application.
4. You are responsible for reading and understanding all forms that you are asked to sign and for keeping copies of them.
5. You must accept responsibility for all agreements that you sign.
6. You must perform the work that is agreed upon in accepting a Work-Study job.

**Financial Aid recipients must meet Standards of Academic Progress to continue to receive aid. See Section IV, Academic Policies, Standards of Academic Progress for Financial Aid Recipients.**



On the Web: [www.delta.edu](http://www.delta.edu)



# Financial Aid Programs

FEDERAL PROGRAMS	A	B	C	D	E	F	WHO IS ELIGIBLE	HOW MUCH?	HOW TO APPLY
Federal Pell Grant	Y	Y	Y			Y		Awards range from \$976-\$5,350.	
Federal Work-Study	Y	Y	Y		Y	Y		Awards range from \$750-\$2,300 per semester. The student earns these funds through part-time employment and receives a paycheck every two weeks.	
Academic Competitiveness Grant	Y	Y	Y		Y	Y	U.S. citizens who graduate from high school after 1/1/2005 and completed a rigorous secondary school program of study. Students must be Pell Grant eligible and enrolled half-time in an Associate Degree or Certificate program.	Up to \$750 for the first academic year. Up to \$1,300 for the second academic year.	Students who self-certify that they have completed a rigorous high school program on the FAFSA will be reviewed for eligibility.
Federal Supplemental Educational Opportunity Grant	Y	Y	Y		Y	Y		Awards range from \$50-\$1,000.	
Federal Stafford Loan (A) Subsidized (B) Unsubsidized (You Pay Interest While In School)	Y	Y	Y		Y	Y	a) Cost minus Family Contribution minus Other Aid = Need. b) Cost minus Other Aid (including subsidized loan) = Need.	Dependent student subsidized plus unsubsidized loan maximum is \$5,500 as Freshman, \$6,500 as Sophomore. Independent student may be eligible for additional unsubsidized Stafford loan.	Obtain application from Delta College Financial Aid Office or online at:  www.delta.edu
Federal Parent Loan (Plus)	Y	Y	Y		Y	Y	Parents of dependent students.	Cost of attendance minus aid = eligibility.	See the following link for information on the Plus loan application process: www.delta.edu/fundingyoureducation/financialaid.aspx
Veterans Benefits	Y				Y		Veterans who are eligible or certain dependents of deceased or disabled veterans.	Varies.	Contact Veterans' Services at Delta College or visit their website at www.delta.edu/
<b>STATE OF MICHIGAN PROGRAMS</b>									
Michigan Competitive Scholarship Program	Y	Y	Y	Y		Y	Students who qualify as semi-finalists on ACT test. Awards made by State of Michigan Department of Education.	Maximum award to be determined by state each academic year.	Take the ACT test in high school. If eligible, list Delta College (002251) in Step 6 of FAFSA. FAFSA deadline March 1st.
Tuition Incentive Program (TIP)	Y	Y		Y			Students under the age of 20 at the time of high school graduation or GED completion and who were Medicaid recipients.	Contact 1.800.447.2687.	TIP eligibility based on Medicaid Insurance recipient for at least 2 years of a 3 year time period.
Michigan Indian Tuition Waiver				Y			Must have written certification from tribe of being at least 24% Native American and proof of 1 year Michigan residency.	Tuition only for any number of credits. Does not pay fees or other charges.	Obtain ITW application at www.itcni.org or from Delta College Financial Aid Office.
<b>DELTA PROGRAMS</b>									
Board of Trustees Scholarship	Y				Y		Tri-County high school graduates recommended by their high school directors. Based on academic excellence.	Determined annually by the Board of Trustees.	Contact high school guidance counselor.
Adult Education Scholarship	Y				Y		Tri-county adult education graduates recommended by their high school directors. Based on academic excellence.	6 credit hours of tuition each semester up to a maximum of 30 total credit hours. Must be used within 4 years of the award.	Contact the director of adult education at your high school.
Foundation Scholarships	Y	Y			Y	Y	Students must meet the selection criteria of the various donors. In most cases, students should have a GPA of 3.0 or better and show financial need.	Typical awards range from \$400-\$1,600.	Obtain the online scholarship application at www.delta.edu. See deadline dates
A. Must meet standards of academic progress for financial aid recipients. B. Must not owe a refund or be in default on any Title IV Aid. C. Must demonstrate financial need as determined by the federal formula.							D. Must be a Michigan resident. E. Must be enrolled in a Delta College academic degree or certificate program. F. Complete and submit the free application for Federal Student Aid according to the directions provided. Be sure to list Delta's Title IV Code (002251) on the application.		

# Registration



Registration at Delta generally takes place three times a year, starting in March/April for the Fall Semester, starting in late October for the Winter Semester, and starting in March for the Spring/Summer Semester.

## The Registration Process

Any student - new, returning, readmitted, dual, transfer, and guest - may register online at [www.delta.edu](http://www.delta.edu) using MyDelta.

- As a new student, you are eligible to register after you complete orientation.
- As a returning, dual, or transfer student you may be given priority to register according to the number of credits you have completed at Delta (including a maximum of 38 transfer credits).
- If you are designated an official guest student by the Admissions Office, you may register at the time all students can register.

Each semester, registration periods are held for any student who has missed the above registration opportunities.

You are expected to register during the official registration periods. You may register after the completion of the official registration periods but before the midpoint of a course with the written permission of the instructor. You may not register past the midpoint for any course. It is College policy that if you have financial obligations to Delta College, you will not be allowed to register until the obligations have been paid or cleared.

For detailed information regarding on-line and in-person registration, you should consult the Course Guide booklet or online at [www.delta.edu](http://www.delta.edu) prior to the start of each semester's registration period. The Guide is also available in the Registrar's Office, Counseling, Admissions Office, the Planetarium and Learning Center in Bay City; the Ricker Center in Saginaw; and the Midland Center.

**Cancelled Courses:** The College reserves the right to cancel any course which does not have a sufficient enrollment of students to warrant its continuation. You should attempt to add another course or apply for a refund at the Registrar's Office. You may also request a refund by phone, letter to the Registrar's Office or email [regis@delta.edu](mailto:regis@delta.edu).

**Course Schedule Changes:** You are expected to complete the courses in which you are registered. If a change is necessary, you may drop online via MyDelta, file a drop form at the Registrar's Office, send a letter, e-mail, or fax to the Registrar's Office requesting the drop or withdrawal. The date this form is received or the postmark on the envelope is the official drop date for the course.

**Added Courses:** You may add courses until the first session begins online via MyDelta or at the Registrar's Office. Courses added after this require written permission of the instructor or division chair with these exceptions:

- eLearning courses require permission after the start date of the course.
- Open entry/open exit courses do not require instructor permission after the start date of the course.

**Student-Initiated Drops:** For courses officially dropped within the refund period of the course, no grade will be reported or recorded on the official College transcript. If the course is officially dropped after the refund period and through four-fifths of the course (the 12th week of a 15-week semester course) you will receive a grade of "W".

If you do not officially withdraw/drop, the instructor will assign an appropriate final letter grade ("A" through "F") in relation to total course requirements achieved.

**Instructor-Initiated Drops:** An instructor has the option of authorizing a grade of "WI" (withdrawal by instructor) for you if you have missed an excessive number of course hours of instruction or you lack the course prerequisites. This authorization may be initiated through four-fifths of the course and reported to the Registrar's Office.

Upon receipt of an authorization, the Registrar's Office will notify you of the reason for the drop.

If you wish to appeal an instructor-initiated drop, the contact must be with the course instructor. If necessary, mediation may be requested of the appropriate Division Chair. All appeals must be in writing, signed by you as the person requesting the appeal, and received within one week following notification of the drop.

**Withdrawal from College:** To completely and officially withdraw (drop all courses), you may complete a drop form at the Registrar's Office. Withdrawal may also be requested by letter, fax, or e-mail. The date this form is received or the postmark on the envelope is the official withdrawal date. Withdrawal may also be processed on-line via My Delta.

## Course/Credit Load

If you are a full-time student, course load is 12-18 credits in a semester. To register for a course load in excess of these limits, you must obtain special permission from a counselor before registration. Approval of an excess course load depends upon your previous academic record.



On the Web: [www.delta.edu](http://www.delta.edu)



## Tuition and Fees

Full payment of tuition and fees by the payment deadline is required to complete registration. Payment may be made by check, cash, MasterCard, VISA, or Discover, with a tuition payment plan, or with approved financial aid or sponsor authorization. When you register for a class, a seat is reserved for you. This obligates you to pay tuition and fees for that seat. If your payment is not sufficient or subsequently adjusted for changes in financial aid or sponsor authorization, Delta College reserves the right to drop you for non-payment or submit your unpaid student account balance to legal collection process. You will be responsible to pay any collection and attorney fees resulting from legal collection process.

Tuition is assessed by credit based on your residency status. The per-credit tuition rate for each semester is published in the Course Guide booklet and is subject to change without prior notice by action of the Board of Trustees.

Fees are charged for specific courses, and are subject to change without prior notice.

If you are a resident of the Delta College district, 60 years of age or older, you may register for courses offered by the College and receive a grant reducing the amount of tuition due by 50%. The grant does not apply to fees (registration, technology, contact hour, course, etc.), books, supplies, trip costs, or other special fees. The College reserves the right to exempt certain courses or programs from grant eligibility. To be eligible for the Senior Citizen Grant Program, you must have a Delta College identification number. The identification number is issued by the Enrollment Services Office after completing a brief application form, which requires proof of age.

An Early Registration Fee of \$30 is charged before the first payment deadline (or \$60 after this) to academic students once each semester or session. Exception: For late start classes, register at least one week before class start date and pay \$30 Registration Fee. A registration fee is not charged to non-credit students.

**Payment Deadlines:** Refer to the Course Guide booklet or online at [www.delta.edu](http://www.delta.edu) for payment deadlines each semester.

**Textbooks and Equipment:** You are required to purchase your own textbooks, supplies, personal attire (i.e., lab coats, clinic shoes, etc. as required by courses), special equipment and tools, and attire and equipment for lifelong wellness courses. Most of these items may be purchased at the College Bookstore, which is located in the Commons/Food Court area and open during all College registration hours, or online.



**On the Web:** [www.delta.edu/bookstore](http://www.delta.edu/bookstore)

## Refund Policy

You may drop courses at the Registrar's Office in person. You may also drop by mail, fax, e-mail, or on-line at [www.delta.edu](http://www.delta.edu) as deadlines may fall on Saturday or Sunday, when offices are closed. Payments for tuition and fee refunds are processed after the Add/Drop period has ended.

### Tuition and Special Course Fee:

**100% refund:** from the official start date and through the 7th calendar day\* (including the first day of class, Saturday, Sunday and holidays).  
**50% refund:** from the 8th through the 11th calendar day\* (including the first day of class, Saturday, Sunday and holidays) of the official start date of the course.

**No refund:** after the 11th calendar day (including the first day of class, Saturday, Sunday and holidays) of the official start date of the course.

### For courses less than four weeks but more than 2 days:

**100% refund:** through the first quarter of the total days\*\* of the course

**50% refund:** through the second quarter of the total days\*\* of the course.

**No refund:** after the second quarter of the course.

### For one or two day courses:

**100% refund:** before the start date of the course.

**No refund:** after course begins.

Courses which have nonrefundable tuition or course fees are noted on my Delta "Search for Classes."

### Registration Fee

No refund, unless all courses are cancelled by the College.

### Offset

During the 12th through the 25th day from the official start date listed in the schedule, students are permitted to offset equal credits and course fees within the same academic discipline (for example, switching from one ENG course to another ENG course, but not from an ENG course to a MTH course) with the written recommendation of their instructors through the add/drop procedure. For credits or fees added in excess of credits dropped, additional tuition and fees must be paid. During this period, grades of "W" will not be assigned to courses dropped through the offset process. Offset cannot be done between sessions (for example, dropping an ENG course during the first 7 1/2 week session and adding an ENG course during the second 7 1/2 week session or dropping a MTH course during the Spring 7 week session and adding a MTH course during the Summer 7 week session).

### Financial Aid Recipients

For students receiving Federal financial aid, funds are returned to programs according to Federal guidelines. Funds are returned in order to Federal Loan Programs, Federal Pell Grant, Federal SEOG, and to other Title IV aid programs.

Students receiving Federal aid who withdraw completely, see Financial Aid for details of the Return of Funds policy that is in place for all recipients of Federal financial aid.

### Request for Refund Exception

The college realizes that on occasion students may need to request an exception to the withdrawal/refund deadline as published due to **extenuating** circumstances. Examples of such circumstances may be obtained on the web at [www.delta.edu](http://www.delta.edu) (search Refunds) or in the Registrar's Office-B100.

\*Calendar day is defined as all the days of the week including Saturday and Sunday.

\*\*Total days is defined as all the days of the course including the start date to the end date listed in the schedule booklet including Saturdays and Sundays.



**On the Web:** [www.delta.edu/](http://www.delta.edu/)

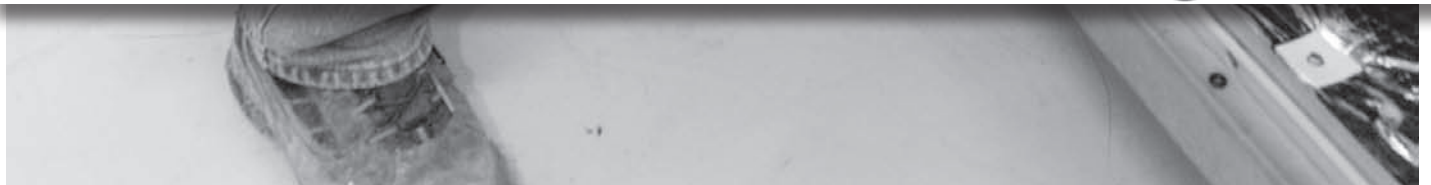


**Engineering,  
Manufacturing &  
Industrial Technology**



**Section III**

# Programs





# Transfer Programs and Procedures

Delta College offers three Associates degrees which provide you with the foundation to transfer to a Baccalaureate granting college or university:

- Associate of Arts (AA 40000)
- Associate of Science (AS 40000)
- Associate of Fine Arts (AFA 40382)

The requirement for the Associate of Art and the Associate of Science are listed in Section IV Graduation Requirements, while the requirements for the Associates of Fine Arts degree can be found in Section III programs.

Transfer programs can be individually developed with a Delta Counselor/Advisor. Also, with the addition of some courses, almost any Delta College Career Education Associate in Business Studies Degree, Associate in Applied Science Degree, or Associate in Applied Arts Degree may be utilized in part toward fulfilling a portion of a Baccalaureate degree. Transferability of these career education programs and courses depends primarily upon the major area of study in the Baccalaureate degree and the senior school of choice.

## Transfer Mission Statement

To facilitate a seamless transition of students and course credits toward degree completion, Delta College is committed to providing academic programs, support services and formal articulation processes for students transferring to or from other accredited institutions.

Delta College is an excellent choice for students planning to earn an Associate degree. While enrolled at Delta in a transfer degree program, you will enjoy these benefits:

- A campus that is convenient to your home and job.
- Costs that are well below four-year colleges and universities.
- Classes that are small and interactive.
- Faculty who are sincerely concerned about your success and available to provide individual assistance.
- Personal student services and academic advising that will support your career decision-making and educational needs.
- Transfer courses that are recognized by respected colleges and universities throughout the United States.
- Time to establish firm career goals and adjust to college-level studies.
- Opportunity to refine your academic abilities and improve reading, composition, mathematics and study skills.

Be assured that Delta's Associate in Arts, Associate in Science and Associate in Fine Arts Degree Programs provide you with a solid academic foundation required for success at your chosen four-year college or university.

Basically, Delta College provides the first half (freshman and sophomore years) of most Baccalaureate degree programs. After completing your Associate in Arts, Associate in Science, or Associate in Fine Arts Degree at Delta College, you will in most cases be qualified to transfer to complete the second half (junior and senior years) of the Baccalaureate degree if you have planned carefully, followed the academic advising provided by Delta Counselors/Advisors, and successfully completed the required courses at the minimum grade level stated by the four-year college or university. It is particularly important for you, as a transfer student, to choose your four-year school in your freshman year because the preparation needed at Delta College to enter one transfer school may be different from the preparation and admission requirements at another school. Professional counselors are available at Delta College to assist you in choosing your college or university and in planning your transfer program to fit that school.

## Transfer Wizard

**Transfer Wizard** is a feature on the Delta College website that allows you to see how courses from several Michigan colleges and universities transfer in to Delta. This does not replace the requirement that all students must send an official transcript to Delta College, but rather is intended to help students guide themselves in selecting courses at Delta College.



**On the Web:** [app.delta.edu/transferwizard/SchoolList.aspx](http://app.delta.edu/transferwizard/SchoolList.aspx)

## Michigan Transfer Network

The Michigan Transfer Network (MTN) is a centralized web-based system that allows any student who has completed a course at any Michigan college or university to find the equivalency for that course at any other Michigan college or university. New equivalencies are loaded to the MTN regularly. If you don't see the course you are looking for it does not mean you will not receive credit. Contact the college/university to which you wish to transfer the course.



**On the Web:** [www.michigantransfERNETWORK.org](http://www.michigantransfERNETWORK.org).

## MACRAO Articulation Agreement with Senior Colleges

The Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Articulation Agreement was established to improve transfer student articulation between two-year and four-year colleges and universities in Michigan. Delta College is a participant in this MACRAO Agreement with the following four-year institutions:

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| * Adrian College                | * Madonna University              |
| Albion College                  | Marygrove College                 |
| Baker College                   | * Michigan State University       |
| * Calvin College                | * Michigan Tech. University       |
| Central Michigan University     | * Northern Michigan University    |
| Clarey University               | Northwood University              |
| * Concordia University          | * Oakland University              |
| Davenport University            | Olivet College                    |
| * Eastern Michigan University   | Rochester College                 |
| * Ferris State University       | * Saginaw Valley State University |
| * Finlandia University          | Saint Mary's College              |
| * Grand Valley State University | * Siena Heights University        |
| Lake Superior State University  | Spring Arbor University           |
| * Lawrence Tech. University     | Western Michigan University       |

\* Indicates four-year colleges and universities which have attached provisions to their Agreements. Usually these can be satisfied after transferring. These provisions can be obtained from the four-year institution.

This Agreement provides that if you complete either the Associate in Arts Degree or the Associate in Science Degree **with a minimum grade of "C" in the MACRAO courses**, or all of the following requirements at Delta College, and are accepted as a transfer student by one of the above schools, you will have satisfied the basic general education requirements of that school. The MACRAO Articulation Agreement does not guarantee admission into a particular college or into any particular program at that college. This Agreement applies to basic studies/general education and does not exempt the transferring student from meeting specific requirements for a particular program or program of study; i.e., education, engineering, business, social work. **Acceptable courses are specified under the Associate in Arts and Associate in Science Degree Requirements in Section IV, Academic Policies, Graduation Requirements.** The specific requirements of the MACRAO Agreement are:

1. English Composition 6 Semester Credits
2. Humanities 8 Semester Credits  
(in at least two subject areas)
3. Social Sciences 8 Semester Credits  
(in at least two subject areas)
4. Natural Sciences 8 Semester Credits  
(in at least two subject areas; must include at least one lab course)
5. A minimum of 12 credits must be taken at Delta.
6. Achieve a minimum grade of "C" in each of the above courses.

A certificate option for MACRAO is available, see "Liberal Arts" program. You can make a request that the MACRAO Agreement be put on your official transcript at the Registrar's Office or online at [www.delta.edu](http://www.delta.edu).



**On the Web:** [www.macrao.org](http://www.macrao.org)

## Transferability of Delta Courses

Based upon information provided to Delta College from the major Michigan public and private four-year universities, Delta's counseling/advising staff has developed many transfer program guide sheets which provide specific course equivalency information about how Delta College courses will transfer relative to specific programs. The transferability of courses between colleges/universities depends on:

1. The college/university into which you transfer.
2. Your program of study (program, or more specifically, the major and/or major and minors you are seeking).
3. The grade you receive in the course. In general, a C or better is necessary; a B in "major" courses.
4. Whether or not the transfer college/university has an equivalent (same) course and if so, the number of credits acceptable for their course.
5. The level of the course. For example, an intermediate algebra course may be acceptable for one program, but not for others that require higher levels of mathematics.

Delta College has liaison relationships with many colleges and universities regarding their transfer requirements and program recommendations; however, if you wish to transfer credits from Delta to another college/university, it is *your* responsibility to be aware of that institution's transfer policies and program requirements.

There is a limit to the number of credits you may transfer into a college or university. Generally, this is 62 credits, or half the total number of credits required for the Baccalaureate degree (always check with college/university).

You should maintain close contact with your counselor or advisor for all possible assistance in registering for the proper courses and maintaining the necessary level of academic performance. While Delta College will make every effort to give proper guidance, you are responsible for your own choices and for developing your own educational plan.

## Evaluating Colleges

Transferring from one college/university to another is very common, but to make it a positive experience, you are encouraged to investigate colleges and universities and their degree requirements; plan ahead; and work closely with your Delta College counselor/advisor, especially in selecting the correct courses for your transfer program. Listed below are several important things to think about as you start evaluating various colleges and universities. You may investigate colleges in Michigan at [www.macrao.org](http://www.macrao.org) or [www.michigantransfERNETWORK.org](http://www.michigantransfERNETWORK.org) on the Internet.

The **academic climate** of the institution should definitely be explored. Compare your background and abilities with those of the present stu-

dents at that particular college or university. The transfer institution's admissions staff and your Delta counselor/advisor can be very helpful in this regard. You should read carefully each institution's statement on admissions requirements to be certain you can meet them.

The **program offerings** of the various institutions need to be considered in your decision-making process. If you are interested in a specific field of study, you should look first at colleges and universities offering recognized and accredited programs in that area. Not all colleges/universities offer the same programs of study.

There are **non-academic factors** to consider also in making your college or university choice. How large is the student body? Is campus housing available? What is the nature of the community in which the school is located and how far is it from home? Does the institution provide the environment and opportunity for the types of extracurricular activities that you enjoy (e.g., sports, arts, student government)? Where and what types of jobs are their graduates getting and what type of placement services do they provide? Be sure to get answers to questions like these through visits to the campus, by looking at the catalog, on the college/university's homepage on the internet, or by talking to current students at the college/university. This information can help you choose an institution that fits your personal interests.

Your investigation should also include a thorough review of the **cost** of the college or university being considered. Usually the basic educational expenses of the institutions for an academic year can be determined from their current catalog. Then, add on amounts for such items as personal expenses and room and board to come to a total that will realistically reflect your overall costs.

Last, but certainly not least, are the respective **application procedures for admission and financial aid**. You must submit all required admissions forms correctly and on time if you expect full consideration. You must also submit all financial aid forms correctly and on time. The schools often make their decisions about admission and financial aid soon after the deadline. They must decide on the basis of the material that they have in hand, so it is to your advantage to be prompt and accurate. Many Michigan institutions charge an admissions application fee and all have specific deadline dates by which your application and other necessary credentials (required test scores, high school and college transcripts) must be received.

## Transfer Degree Requirements

Each institution of higher education has its own requirements for admission, majors, general education, and so on. These requirements are stated in the college/university's official catalog, bulletin, or on its website. Usually credits are defined as semester hours but some colleges and universities use the term or quarter hour system. To earn a Bachelor's degree, you will generally be required to fulfill the following:

- **Credit requirements.** Minimum number of credits, typically 120 to 130 semester credits for a Bachelor's degree.
- **General Education requirements.** Minimum number of credits earned in each of certain broad groups of courses, such as the humanities, the social sciences, the physical or natural sciences, and mathematics. Some institutions refer to these as distribution or core requirements.
- **Level requirements.** Minimum number of credits earned in courses on such levels as introductory, intermediate, and advanced, or in specific numbered levels of courses such as 300 and 400, commonly referred to as junior and senior-level courses.
- **Major or concentration requirements.** Minimum number of credits earned in a subject area of specialization (i.e., English, chemistry, business administration) for the degree. About one-fourth of the total

number of credits required for a degree must be in the major or field of concentration.

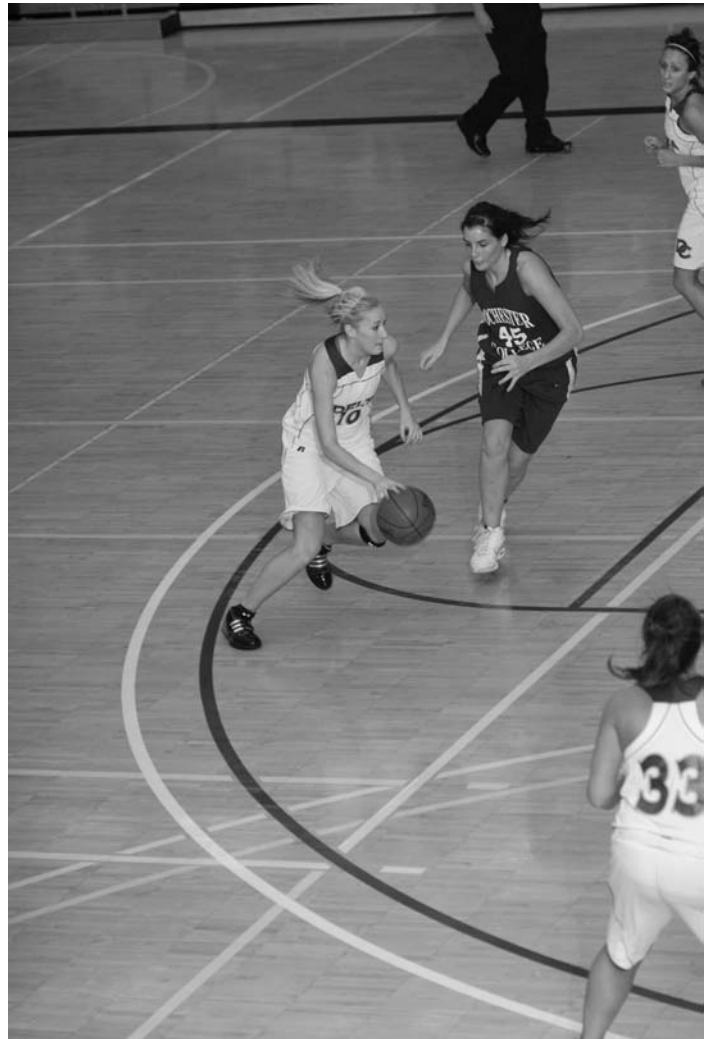
- **Minor requirements.** Minimum number of credits earned in a second subject of concentration/specialization. Generally the number of credits required is about half to two-thirds required for a major. Not all degrees require you to declare a minor.
- **Residence requirements.** Minimum number of credits earned in attendance at the institution which is granting the degree (as opposed to transfer credits earned at another college/university). This is not to be confused with residency which refers to where one lives.
- **Elective requirements.** Minimum number of credits earned in optional courses that the student chooses.
- **Grade requirements.** Minimum cumulative grade point average GPA of grades earned in all courses taken and often, in all courses taken in the major and/or minor. Some colleges and universities also require a minimum grade in specific courses.
- **Specific subject requirements.** Examples include: freshman-level English composition; mathematics; science; two years of foreign language as demonstrated on a specified examination; and computer literacy.

## Transfer Procedures Checklist

It is important that you select, as early as possible, the institution to which you plan to transfer because colleges/universities differ markedly as to curricula offered and their corresponding requirements. If you plan to attend another college or university after the completion of your courses at Delta College, you should:

- Seek academic advising from a Delta counselor or advisor so you will enroll in courses that best fit your needs, achievement level, program, and transfer institution requirements.
- Check out the college or university's homepage on the internet. To see if a Michigan college or university has one search these websites: [www.macrao.org](http://www.macrao.org) or [www.michigantransfernet.org](http://www.michigantransfernet.org).
- Visit transfer college/university campuses and make a list of questions in advance to use when you visit their Admissions Offices or other departments. Schedule appointments in advance if you would like a campus tour, want to visit a residence hall, or want to talk with specific personnel.
- Apply for transfer admission well in advance (almost a year) of the anticipated date of transfer. Admission application forms for most Michigan public and some Michigan private senior institutions are available via the Internet.
- Review the official catalog of your transfer college/university of choice. Current Michigan catalogs of many institutions are available for use in the Counseling/Advising & Career Services Office (D102). The college or university catalog can usually be accessed through its website.
- If you served in the military, obtain and send an official copy of your discharge record (DD214 form).
- Request that each college or university you have attended send an official transcript of your courses and grades. Colleges/universities may charge a small fee. Transcripts will only be acceptable if they are mailed directly by the school and if they have the official seal/signature. Delta transcripts are requested from the Registrar's Office and are free of charge.
- If required, copies of appropriate test scores (usually ACT or SAT scores) and your high school transcript should be sent. Usually this is only required if you have completed less than 24 to 30 transferable credits. This information is usually detailed in the transfer admission application directions.

- Complete the appropriate financial aid application materials **early** if you plan to apply for grants, loans, or scholarships. You must also request that each previous institution attended mail a financial aid transcript regardless of whether or not you ever applied for financial aid from that college/university. These financial aid transcripts are **not** the same as your academic transcript which contains courses and grades. They are requested from financial aid offices and there is no charge.



# Transfer and Career Education Articulations



Transfer programs of study are designed for students who have earned at least 62 credits at Delta College and then transfer to a four-year college or university. Articulation guides for the following colleges and universities are available at the Delta College Articulation Office web page below. The universities below have signed an articulation agreement with Delta College to guarantee a smooth transition.



**On the Web:** [www.delta.edu/artic](http://www.delta.edu/artic)

Delta College Program (Code)	University - Program (Degree)
Accounting (ABS.10172)	<b>Davenport University</b> - Accounting Information Management (BBA) -Professional Accountancy (BBA/MBA) <b>Northwood University</b> - Accounting (BBA) - Management (BBA/MBA) *DU, EMU, FSU, FU, KU, OU, SHU, SLU, SVSU
Architectural Technology (AAS.15872)	CMU,*EMU, FSU, FU, KU, OU, SHU, NU, SLU, SVSU
Art & Design (AFA.40382)	<b>Central Michigan University</b> - Chemistry (BS) <b>College of Creative Studies (BFA)</b> *FU, JIU, KU, OU, NU, SLU, UM-F
Automotive Service Education Program (AAS.60842)	*EMU, FSU, FU, NU, KU, OU, SHU, SLU
Automotive Service Technology (AAS.15844)	*EMU, FSU, FU, KU, OU, NU, SHU, SLU
Aviation Flight Technology (AAS.25795)	<b>Western Michigan University</b> - Aviation Flight Science (BS) *EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Business Administration (AA.40000)	<b>Central Michigan University</b> - All Business Majors (BS in Bus Admin) <b>Eastern Michigan University</b> - Business Administration (BBA) <b>Franklin University</b> - All Business Majors (BS) <b>Kettering University</b> - Business Administration (BS) <b>Northwood University</b> - All Business Majors (BBA) <b>Rochester College</b> - Management (BBA) <b>Saint Leo University</b> - All Business Majors (BA) (BS) *FU, JIU, KU, OU, NU, SLU,
Chemical Processing Technology (AAS.15829)	*EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Chemical Technology (AAS.15464)	<b>Central Michigan University</b> - Chemistry (BS) <b>Eastern Michigan University</b> - Polymers & Coatings (BS) *EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Chemistry (AS.40000)	<b>Central Michigan University</b> - Chemistry (BS) <b>Kettering University</b> - Environmental Chemistry (BSEC) *EMU, FU, JIU, KU, OU, NU, SLU
Child Development (AAA.25762)	<b>Ferris State University</b> - Early Childhood Education (BS) *FSU, FU, KU, OU, NU, SU, SVSU
Chiropractic, Pre (AS 40000)	<b>Palmer College of Chiropractic</b> *KU
Computer Science (AA.40000) (AS.40000)	<b>Franklin University</b> - Computer Science (BS) Management Information Sciences (BS) <b>Kettering University</b> - Computer Science (BS) *FU, JIU, KU, OU, NU, SLU
Computer Science & Information Technology (Business & Information Technology ABS.10130) (Computer Applications ABS.10131) (Network Technology AAS.17135) (PC Systems Support & Technology AAS.17136) (Programming AAS.17137) (Web Information Technology AAS.17138) (Information Security & Technology AAS 17165)	<b>Davenport University</b> - Biometric Security (BAS) - Computer Gaming and Simulation (BAS) - Computer Networking (BAS) - Computer Information Systems (BAS) - Network Security (BAS) - Information and Computer Security (BAS) <b>Ferris State University</b> - Computer Information Systems (BS) Information Security & Intelligence (BS) <b>Northwood University</b> - Management Information Systems/Management (BBA) <b>Saint Leo University</b> - Computer Information Systems (BS) *EMU, FSU, FU, KU, OU, SHU, SLU, SVSU
Delta College Program (Code)	University - Program (Degree)

\* See KEY - page 28

Dietetics, Pre (AS.40000)	<b>Central Michigan University</b> - Dietetics (BS) *EMU, FU, JIU, KU, OU, NU, SLU
Construction Management (AAS.15875)	*EMU, FSU, FU, KU, OU, NU, SHU, SVSU
Criminal Justice (Basic Police Training - AAA.25725) (Corrections - AAA.25726) (Law Enforcement - AAA.25727)	<b>Davenport University</b> - Public Safety & Security Management (BBA) - Biometric Security (BAS) <b>Ferris State University</b> - Criminal Justice (Options - Corrections, Law Enforcement, and Law Enforcement with Basic Police Training) <b>Saginaw Valley State University</b> - Criminal Justice (BA) (Law Enforcement only) *EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Dental Assisting (AAS.20510)	CMU,DU, *EMU, FSU, KU, OU, NU, SHU, SLU, SVSU
Dental Hygiene (AAS.20515)	<b>University of Detroit Mercy</b> - Dental Hygiene (BS) CMU,DU, *EMU, FSU, FU, KU, OU, NU, RC, SHU, SLU, SVSU
Electronic Media/EMB (AAA.15340)	<b>Ferris State University</b> - Television & Digital Media Production (BS) *EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Elementary Education (AA.40000)	<b>Central Michigan University</b> - Elementary Education (BS) <b>Saginaw Valley State University</b> - Elementary Education (BA) *FU, JIU, KU, OU, NU, SLU
Engineering, Pre (AS.40000)	<b>Central Michigan University</b> - Electric Engineering (BS) Mechanical Engineering (BS) <b>Kettering University</b> - Applied Mathematics (BS) Applied Physics (BS) Computer, Electrical, Industrial, and Mechanical Engineering (BS) Environmental Chemistry (BS) Management (BS) <b>Saginaw Valley State University</b> - Electrical Engineering (BSEE) Mechanical Engineering (BSME) Engineering Technology Management (BS) *FU, JIU, KU, OU, NU, SLU, UM-F
Environmental Technology (AAS.15466)	<b>Central Michigan University</b> - Environmental Studies (BS) *EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Fire Science (AAS.25731-25736)	<b>Davenport University</b> - Public Safety & Security Management (BBA) <b>Northwood University</b> - Management/Fire Science (BBA) *EMU, FSU, FU, KU, OU, RC, SHU, SLU, SVSU
Geography (AA.40000) (AS.40000)	<b>Central Michigan University</b> - Geographic Information Sciences (BS) *KU
Health Fitness Education & Promotion (AAS.25710)	<b>Central Michigan University</b> - Health Fitness (BS) *FSU, FU, NU, KU, OU, SHU, SLU, SVSU
Industrial Technology Education (AAS.15710)	<b>Saginaw Valley State University</b> - IT Education (BAS with secondary teaching certificate) *EMU, FU, KU, OU, SHU, SLU, SVSU
Interior Design (ABS.10216)	*EMU, FU, OU, NU, SLU, SVSU,
Journalism (AA.40000)	<b>Central Michigan University</b> - Integrative Public Relations (BS) Journalism (BS) *FU, JIU, OU, NU, SLU
Legal Support Professional (ABS.10282)	<b>Davenport University</b> - Paralegal Studies (BS) <b>Eastern Michigan University</b> - Legal Assistant-Paralegal Studies (BS) *EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Liberal Arts (AA.40000) (AS.40000)	*FU, JIU, KU, OU, NU, SLU, UM-F
Liberal Arts (Meteorology) (AA.40000) (AS.40000)	<b>Central Michigan University</b> - Meteorology with CS & Mathematics Minors (BS) *FU, JIU, KU, OU, NU, SLU, UM-F
Liberal Arts (Physics/Chemistry) (AA.40000) (AS.40000)	<b>Central Michigan University</b> - Physics Plan B (BS) Chemistry (BS) Chemical Technology Plan B (BS) <b>Kettering University</b> - Applied Physics (BSAP) Environmental Chemistry (BSEC) *FU, JIU, KU, OU, NU, SLU
Liberal Arts (Political Science/Econ) (AA.40000) (AS.40000)	<b>University of Michigan - Flint</b> - Masters in Public Administration (MPA) *FU, JIU, KU, OU, NU, SLU
Delta College Program (Code)	University - Program (Degree)

\*See Key page 28

Management (ABS.10251 - Cosmetology) (ABS.10254 - General) (ABS.10256 - Marketing) (ABS.10257 - Merchandising) (ABS.10258 - Office Services) (ABS.10260 - Retail) (ABS.10262 - Entrepreneurship/Small Business)	<b>Davenport University</b> - Human Resources Management (BBA) - International Business (BBA)      - Service Management & Marketing (BBA) - Management (BBA)                      - Sports Management (BBA) - Marketing (BBA)                      - Strategic Human Resource Management (BBA) <b>Eastern Michigan University</b> - (BBA with approved Business major) [General Management only] <b>Kettering University</b> - Management (BS) <b>Northwood University</b> - Management (BBA) - Marketing & Management - dual major (BBA) - Fashion Marketing/Management - dual major (BBA) <b>Walsh College</b> - Management (BBA) CMU*EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU, WC
Manufacturing and Industrial Technology (AAS.15851)	<b>Lawrence Technological University</b> - Engineering Technology (BS) <b>Saginaw Valley State University</b> - Engineering Technology Management (BS) *DU, EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Mechanical Engineering Technology (AAS.15822)	<b>Lawrence Technological University</b> - Engineering Technology (BS) <b>Saginaw Valley State University</b> - Engineering Technology Management (BS) CMU, DU,*EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Medical Office Professions/Medical Secretary(ABS.10288)	<b>Davenport University</b> - Health Service Administration (BBA) - Medical Case Management (BBA) *EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Nursing RN (AAS.20564)	<b>Davenport University</b> - Nursing (BSN) <b>Ferris State University</b> - Nursing (BSN) <b>Saginaw Valley State University</b> - Nursing (BSN) <b>University of Michigan-Flint</b> - Nursing (BSN) CMU, EMU, FSU, FU, KU, OU, NU, SHU, SLU, UM-F
Office Professions (Administrative Assistant - ABS.10296)	*EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Physical Therapist Assistant(AAS.20573)	<b>Central Michigan University</b> - Off-Campus Programs (BAA) CMU, DU,*EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Radiography (AAS.20545)	CMU, EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU, UM-F
Refrigeration/Heating, Air Conditioning Service Technology (AAS.15890)	*EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Residential Construction (AAS.15887)	CMU, EMU, FU, KU, OU, NU, RC, SHU, SLU, SVSU
Respiratory Care (AAS.20579)	CMU, EMU, FU, KU, OU, NU, RC, SHU, SLU, SVSU
Secondary Education (AA.40000) (AS.40000)	<b>Central Michigan University</b> - Secondary Education (BS) *FU, JIU, OU, NU, SLU, UM-F
Skilled Trades (AAS.60891)	*DU, EMU, FSU, FU, KU, OU, NU, SHU, SLU
Sonography, Diagnostic Medical (AAS.20547)	CMU, EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Surgical Technology (AAS.20549)	CMU, EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Water Engineering Technology (AAS.15827)	*EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
Welding Engineering Technology (AAS.60897)	*EMU, FSU, FU, KU, OU, NU, SHU, SLU, SVSU
* See KEY - page 28	

## Community College Agreements

As a member of the Michigan Community College Association, Delta College partners with other community colleges to provide effective short-term transfer programs. Discussion continues with many other community colleges. Current partnerships include

Delta College Program (Code)	University - Program (Degree)
Chemical Process Technology (AAS.15829)	Alpena Community College - Chemical Process Technology (AAS) Bay de Noc College - Chemical Process Technology (AAS) Mid Michigan Community College - Chemical Process Technology (AAS)
Criminal Justice (CSZ. 35725)	Mid Michigan Community College - Criminal Justice (AAS) Law Enforcement with Basic Police Training (AAS)
Criminal Justice, Law Enforcement (AAA.25727)	Alpena Community College - Law Enforcement with Basic Police Training (AAS)
Dental Hygiene Clinicals (AAS.25015)	Alpena Community College - Dental Hygiene Clinicals
Maritime Deck/Officer	Ferris State University - Business Administration (BS) Northwestern Michigan College, Great Lakes Maritime Academy

### \* KEY to articulation information with select colleges/universities:

**(CMU) Central Michigan University** - Specific programs will transfer to CMU for a Bachelor of Science degree. Many occupational or technical programs will transfer to CMU (off campus programs) for a Bachelor of Applied Arts - Administration.

**(DU) Davenport University** - Specific associate degree programs from Delta College will transfer and apply to either a 2+2 or 3+1 bachelor degree program.

**(EMU) Eastern Michigan University** - Approved technical programs at Delta College will transfer to Eastern Michigan University and will apply toward a Bachelor of Science in Technology Management.

**(FSU) Ferris State University** - Any Delta College associate degree with a GPA of not less than 2.0 on a 4.0 scale may be transferred; qualified students may transfer all credits in the associate degree toward the bachelor degree.

**(FU) Franklin University** - A Delta College associate degree plus 20-24 credits from a recommended list may be transferred. Majors are available in Accounting, Applied Management, Business Administration, Computer Science, Digital Communications, Health Care Management, Information Technology, Management, Management Information Sciences, and Public Safety Management. FU courses may be taken at home through distance learning. Nine minors are also available; on the web; [www.alliance.franklin.edu](http://www.alliance.franklin.edu)

**(JIU) Jones International University** - Bachelor of Arts in Business Communications (only upper level) for all AA and AS Degrees; on the web: [jonesinternational.edu](http://jonesinternational.edu)

**(KU) - Kaplan University** - Students having completed an Associates Degree program (AA, AAS, AS, or specialized associate degrees) will be eligible for a block transfer and acceptance into Kaplan's "advanced start" baccalaureate option.

**(OU) Oakland University** - The 2 + 2 program provides for transfer of up to 62 credits. Students with an associate degree in any area except nursing may qualify for a Bachelor of General Studies Degree at Oakland University.

**(NU) Northwood University** - This university will accept any associate degree from Delta College and apply the credits to either a 2 + 2 or 3 + 1 program for a Bachelor of Business Administration with a major in management.

**(RC) Rochester College** - A Delta College graduate may transfer up to 92 credits into a Bachelor of Business Administration in Management and Bachelor of Science in Behavioral Science from occupational concentrations. Rochester College requires 128 credits. In most cases Delta students transferring up to 92 hours may complete their bachelor degree in one year. Rochester College offers a non-traditional degree completion program for the B.B.A. for working adults. (Pertains only to Career Education Articulations.)

**(SHU) Siena Heights University** - Delta AA, ABS and AAS degrees will transfer and apply to a 3+1 Bachelor of Applied Science or Bachelor of Business Administration program.

**(SLU) Saint Leo University** - A Delta College graduate may transfer up to 66 credits including general education toward a Bachelor of Arts in Accounting or Business Administration or a Bachelor of Science in Computer Information Systems. All courses can be taken at home; on the web: [video.saintleo.edu](http://video.saintleo.edu)

**(SVSU) Saginaw Valley State University** - Specific technical associate degree programs at Delta College will transfer and apply to a Bachelor of Applied Studies degree. Additional basics and a minor are required to complete the bachelor degree. (Pertains only to Career Education Articulations.)

**(UM-F) University of Michigan - Flint** - Technical associate degree programs at Delta College will transfer to the University of Michigan - Flint and will apply toward a Bachelor of Applied Science degree program. (Pertains only to Career Education Articulations.)

**(WC) Walsh College** - A maximum of 82 credit hours may be transferred towards a Bachelor of Business Administration degree with majors in Business Information Technology and Management, or a Bachelor of Science in Business Information Technology. Honors Fast Track students may transfer up to 87 credits towards the BBA/MBA program.

# Academic Programs



## Career Education Mission Statement

Delta College's Career Education Programs provide core knowledge, skills and learning experiences that prepare students for successful entry and advancement in careers, baccalaureate institutions, and global opportunities.

Many educational programs offered at Delta College are designed to prepare you for immediate employment in the job market. The career education curricula provides you with the necessary skills and knowledge required for entry-level positions in career fields. In addition, most programs are diversified sufficiently to create some social and economic awareness. Attending full-time, you can complete most Certificate programs in one year and the majority of Associate degree programs in two years.

Most career education programs are not specifically designed for transfer purposes to Baccalaureate degree-granting institutions. Transfer of all credits earned should not be expected.

In some programs, credits earned in career education programs may be transferable into a Baccalaureate degree program at a four-year college or university; however, these programs are not designed specifically to parallel the first two years of university study. You should consult with your Delta counselor and the Admissions Office of the college or university into which you wish to transfer.

## Terms Used in this Section

**Certificate:** A Certificate is awarded for the completion of various career education curricula. Most Certificates prepare you for specific jobs or aspects of a job. Some Certificates are part of an Associate degree program, in which case the credit earned in the Certificate may be used toward the Associate degree.

Certificate of Completion (C) - less than 6 credits

Certificate of Achievement (Z) - 6 to 23 credits

Advanced Certificate (A) - 24 or more credits

Post Associate Certificate (P) - beyond Associate's level with 6 or more credits.

**Applied Associate Degree:** The degree is broader in scope than the Certificate and includes a varying number of General Education and support courses.

AAS - Associate in Applied Science

AAA - Associate in Applied Arts

ABS - Associate in Business Studies

AFA - Associate in Fine Arts

DE (Dual Degree)-AAS & ABS

**Electives:** These are courses applicable toward a degree or Certificate which may be chosen to meet your individual interests and needs.

**Many courses in these Programs have prerequisites. See Section VI, Course Descriptions for prerequisite information.**

Program Title	Associate Degree	Certificate	Page
Academic Career Experience		CBZ.35100 (Z)	33
Accounting	ABS.10172	CBZ.35172 (Z), CBA.35172 (A)	34
Alternative Energy - Wind Turbine	AAS.15805		35
Architectural Technology	AAS.15872		36
Art + Design	AFA.40380		37
Automotive Service Educational Program (ASEP)	AAS.60842		38
Automotive Service Technology	AAS.15844	CTA.35845 (A)	39
Aviation Flight Technology	AAS.25795		40
Chemical Process Technology	AAS.15829	CSA.35835 (A)	41
Chemical Technology	AAS.15464		42
Child Development	AAA.25762	CSA.35763 (A), CSZ.35763 (Z)	43
Educational Paraprofessional		CSZ.35763	43
Computer Aided Drafting		CTA.35865 (A)	44
Computer Numerical Control		CTA.35864 (A)	44
Computer Science & Information Technology			
Business & Information Technology (BIT)	ABS.10130		45
Computer Applications (CA)	ABS.10131	CBA.35131 (A)	46
Information Security & Technology (IST) / Criminal Technology	AAS.17165	CTP.35165 (P)	47
Information Security & Technology (IST) / Financial Security	AAS.17170	CTP.35170 (P)	47
Information Security & Technology (IST) / Information Assurance	AAS.17172		47
Network Technology (NT)	AAS.17135	CTA.35135 (A)	49
PC Systems Support & Technology (PC)	AAS.17136	CTA.35136 (A)	50
Programming (PROG)	AAS.17137		51
Web Information Technology (WEB)	AAS.17138	CTA.35138 (A)	52
Construction Management	AAS.15875		53
Criminal Justice:			
Corrections	AAA.25726	CSZ.35724 (Z)	54
Law Enforcement	AAA.25727		54
Law Enforcement with Basic Police Training	AAA.25725	CSZ.35725 (Z)	54
Security/Loss Prevention Specialist	AAA.25723	CSZ.35723 (Z)	54
Customer Energy Specialist		CTA.35873 (A)	55
Dental Assisting	AAS20510	CHA 35512(A)	56

Program Title	Associate Degree	Certificate	Page
Dental Hygiene	AAS.20515		58
Diagnostic Medical Sonography	AAS.20547	CHA.35545 (A)	60
Digital Film Production		CEA 35330 (A)	61
Dual Degrees			
Automotive Service Technology/General Management	DE.30844		62
Dental Assisting/General Management	DE.30518		62
Dental Hygiene/General Management	DE.30519		62
Diagnostic Medical Sonography/General Management	DE.30547		62
Health Fitness Education & Promotion/General Management	DE.30710		62
Nursing/General Management	DE.30569		62
Physical Therapist Assistant/General Management	DE.30575		62
Radiography/General Management	DE.30546		62
Respiratory Care/General Management	DE.30578		62
Surgical Technology/General Management	DE.30550		62
Electronic Media/Broadcasting (EMB)	AAA.15340		63
Entrepreneurship		CBZ.35263 (Z)	64
Environmental Technology	AAS.15466	CSA.35467 (A)	65
Fire Science Technology :			66
Emergency Medical Services	AAS.25732		66
Fire & Industrial Loss Prevention Officer		CTA.35732	66
Fire Fighter Technician	AAS.25736		66
Fire Investigation/Prevention	AAS.25734		66
Fire Science Technology	AAS.25731		66
Industrial/Commercial Security & Safety	AAS.25733		66
Leadership & Training	AAS.25735		66
Group Fitness Instructor		CSA.35740 (A)	68
Health Fitness Specialist	AAS.25710		68
Industrial Technology Education	AAS.15710		69
Interior Design	ABS.10216	CBA.35216 (A)	70
International Studies		CSA.35493 (A)	71
Lean Resource Management		CTZ.35851 (Z)	72
Legal Support Professional	ABS.10282		72
Law Office Foundation		CBA.35283 (A)	72
Law Office Specialist		CBA.35284 (A)	72
Liberal Arts (MACRAO)		CSA.35390 (A)	73
Lineworker/Electrical Utility	AAS 15810	CTA 35810 (A)	74
Management			
Cosmetology Management	ABS.10251		75
Entrepreneurship/Small Business Management	ABS.10262	CBA.35263 (A)	75
General Management	ABS.10254		75
Marketing Management	ABS.10256		75
Merchandising Management	ABS.10257	CBA.35257 (A)	75
Office Services Management	ABS.10258	CBA.35258 (A)	75
Retail Management	ABS.10260	CBA.35260 (A)	75
Management/Subsequent Degrees:			77
Business Management	ABS.10255		77
Northwood 3 + 1	ABS.85005		77
Manufacturing & Industrial Technology	AAS.15851		78
Lean Manufacturing		CTZ.35852 (Z)	78
MIT Supervisor		CTZ.35850 (Z)	78
Massage Therapy		CHZ.35589 (Z), CHP.35588 (P)	79
Mechanical Engineering Technology	AAS.15822		80
Medical Office Professions			
Health Insurance Coding & Claims Specialist		CBA.35286 (A)	81
Medical Secretary	ABS.10288		81
Medical Transcription Specialist		CBA.35285 (A)	81

Program Title	Associate Degree	Certificate	Page
Nursing (ADN)	AAS.20564		82
Nursing Transition Track:			
Licensed Paramedic to RN	AAS.20569		84
Licensed Practical Nurse to RN	AAS.20568		84
Office Professions:			
Administrative Assistant	ABS.10296		86
Office Assistant		CBA.35291 (A)	86
Office Specialist		CBA.35292 (A)	86
Office Skills Core		CBZ.35293 (Z)	86
Personal Trainer		CSA.35742 (A)	87
Physical Therapist Assistant	AAS.20573		88
Practical Nurse (PN)		CHA.35563 (A)	90
Professional Studies in Office Administration		CBZ.35297 (Z)	92
Quality Assurance		CTZ.35877 (Z)	93
Quality Management		CTZ.35878 (Z)	93
Radiography	AAS.20545		94
Refrigeration/Heating, Air Conditioning Service Technology	AAS.15890		96
Air Conditioning		CTA.35891 (A)	96
Commercial Refrigeration		CTA.35890 (A)	96
Heating		CTA.35892 (A)	96
Residential Construction	AAS.15887	CTA.35889 (A)	97
Respiratory Care	AAS.20579		98
Skilled Trades (Apprenticeship)	AAS.60891		99
Agriculture Maintenance		CTA.35895 (A)	99
Carpenter (Building Trades)	AAS.60891		99
Electrician (Industrial)	AAS.60891		99
Jobbing Molder	AAS.60891		99
Machine Builder	AAS.60891		99
Machine Repair	AAS.60891		99
Millwright	AAS.60891		99
Pattern Maker	AAS.60891		99
Pipefitter (Industrial Maintenance)	AAS.60891		99
Plumber-Pipefitter	AAS.60891		99
Pre-Apprentice Skilled Trades Construction		CTZ.35896 (Z)	99
Pre-Apprentice Skilled Trades Electrical		CTA.35894 (A)	99
Pre-Apprentice Skilled Trades Mechanical		CTA.35893 (A)	99
Stationary Boiler Engineering	AAS.60891		99
Tinsmith	AAS.60891		99
Tool/Die Maker	AAS.60891		99
Tool Hardener	AAS.60891		99
Surgical Technology	AAS.20549	CHA.35547 (A)	102
Water Environmental Technology	AAS.15827	CTA.35827 (A)	103
Welding Engineering Technology	AAS.60897	CTA.35899 (A)	104
Writing/Technical Writing			
General		CEA.35319 (Z)	104
Technical		CEA.35320 (Z)	104
Youth Services		CSA.35775 (A), CSZ.35775 (Z)	105



# Validation Procedures

Some programs require completion of prerequisites and a validation process before registration in restricted enrollment programs. Currently these programs are:

## Health Programs

- Dental Hygiene
- Diagnostic Medical Sonography
- Nursing RN (Full-time and Part-time)
- Nursing Transition Track (Licensed Paramedic or Practical Nursing to RN)
- Physical Therapist Assistant
- Practical Nurse
- Radiography
- Respiratory Care
- Surgical Technology

## Technical Programs

- Lineworker/Electrical Utility

## Application and Validation

1. Complete all prerequisite courses as specified in this catalog. All waivers and incomplete course work must be posted on your transcript prior to application for validation. Transcripts from transfer institutions must be received within two weeks after the semester ends.
2. Obtain the Validation Application form from the Registrar's Office, Counseling, or online at [www.delta.edu](http://www.delta.edu). Other documents may be required, such as observation forms.
3. Complete and submit the Validation Application to the Registrar's Office or online at [www.delta.edu](http://www.delta.edu) anytime during the semester in which you will complete your prerequisites.

**You may be validated and eligible for one program only.**

4. Registrar's Office personnel will process your completed Validation Application.
5. Validation Applications will be validated only by Registrar's Office staff and processed no later than 30 days after the application deadline.
  - a. Qualified students will be assigned a semester and year of validation which will be entered into the student's computer record (e.g., 10F or 11W or 11S).
  - b. Nonqualified students must submit another Validation Application after successfully completing all required prerequisites and other qualifications.
6. The semester and year of validation will be valid for three years if renewed each year with the Application for Continuation. This form will be mailed to the address on file with the Registrar's Office.

You need to attempt to gain entrance into a program within three years to be maintained on the validation list. If the wait to enter a program exceeds three years, you must gain entry within the earliest possible time frame by attempting to register for program entry. Notification will be sent indicating when you will be dropped from the validation list.

After your validation eligibility expires, a new Validation Application must be submitted prior to attempting to register for the clinical sequence. You must have successfully completed all prerequisites/qualifications required at the time the new Application is submitted. Should you not register within the three-year period, it may be necessary to retake some prerequisite courses.

Delta College reserves the right to modify validation and registration procedures for programs based on demand for enrollment.

## Registration

1. A special registration will be held for validated students to enter the restricted enrollment courses of these programs. Check each semester's Course Guide booklet or online at [www.delta.edu/regis](http://www.delta.edu/regis) for special registration dates, times, and offerings. Special registrations are usually held June for Fall semester, October for Winter semester, and March for Spring/Summer semester.
2. For the registration process, every student will waitlist themselves and at the end of the registration period the computer system will rank order students based on several criteria. A cumulative score will be obtained by ranking the semester of validation, grades earned in selected courses as required in your program, residency status, giving preference to in-district students, total credits taken at Delta College, and overall GPA earned at Delta College. If a tie exists, the higher overall GPA will break the tie. Students will be registered based on the computer ranking.

Individual faculty cannot add to published course capacity by accepting first-time enrolled students as overloads.

3. Each validation program semester and registration must be certified before being considered official.
4. Students not making payment by the due date (same as the first due date specified in the Course Guide booklet for all other students participating in registration) or voluntarily cancelling will be deleted from courses.
5. Open positions that result from the above deletions or cancellations will be filled by students on the registration waiting list.
6. Students will retain their validation through the first week of class and may not validate for another program during this time. After the first week of class, students who remain in the program, as well as students who drop, lose their validation and must resubmit a new Validation Application Form.

## Special Health Program Procedures

1. Repeat students will be admitted in compliance with program re-entry procedures as outlined in specific program handbooks.
2. After completion of the special registration, registered students may be required to attend clinical orientation sessions. Alternates may be invited to these sessions. Orientation information is listed in the Course Guide booklet and online at [www.delta.edu](http://www.delta.edu).
8. You are responsible for completing all clinical courses and requirements in effect on the day the clinical sequence begins.



**On the Web:** [www.delta.edu](http://www.delta.edu).

# Academic Program Guides



## Academic Career Experience

*Career Pathway: Business, Management,  
Marketing and Technology*



### Certificate of Achievement

Academic Career Experience (ACE), commonly known as "Cooperative (Co-op) Education," is a structured educational strategy integrating classroom studies with learning through productive, paid work experiences in a field related to a student's academic or career goals. It provides progressive experiences in integrating theory and practice. ACE is a collaboration among students, employers, and Delta College; and it provides academic credit for structured job experience.

A Certificate of Achievement in Academic Career Experience will be awarded at the completion of the Year I Experience (6 credits). An additional 4 credits can be earned if the Year II Experience is completed (10 credits total). Additional credit may also be earned through internships and/or special projects.

		Sem	Hrs
<b>Year 1 Experience</b>			
ACE 105	Year I Experience I - Business & Human Services.....AND		3
ACE 106	Year I Experience II - Business & Human Services.....		3
	<b>OR</b>		
ACE 110	Year I Experience I - Communications & Sciences .....AND		3
ACE 111	Year I Experience II - Communications & Sciences .....		3
	<b>OR</b>		
ACE 115	Year I Experience I - Health Science .....AND		3
ACE 116	Year I Experience II - Health Science .....		3
	<b>OR</b>		
ACE 120	Year I Experience I - Technical & Industrial .....AND		3
ACE 121	Year I Experience II - Technical & Industrial .....		3
	<b>Total For Certificate Of Achievement</b>		<b>6</b>
<b>Year 2 Experience</b>			
ACE 205	Year II Experience I - Business & Human Services.....AND		2
ACE 206	Year II Experience II - Business & Human Services.....		2
	<b>OR</b>		
ACE 210	Year II Experience I - Communications & Sciences .....AND		2
ACE 211	Year II Experience II - Communications & Sciences .....		2
	<b>OR</b>		
ACE 215	Year II Experience I - Health Science .....AND		2
ACE 216	Year II Experience II - Health Science .....		2
	<b>OR</b>		
ACE 220	Year II Experience I - Technical & Industrial .....AND		2
ACE 221	Year II Experience II - Technical & Industrial .....		2
	<b>Subtotal</b>		<b>4</b>
<b>Optional Additional Credits</b>			
ACE 285	Internship: Design Technology .....		1
ACE 280	Internship: Technology Management.....		1
	<b>Subtotal</b>		<b>2</b>
	<b>Minimum Total Credits Required For Certificate Of Achievement</b>		<b>6</b>
	<b>Optional Additional Year Ii Experience Credits</b>		<b>4</b>

### Notations:

- All classes must be completed with a grade of "B" or better.
- To qualify for the program, all applicants must:
  - Have a minimum of one year of studies remaining at Delta college before graduating or transferring.
  - Be willing to make a minimum one-year commitment to an Academic Career Experience assignment.
  - Be a currently enrolled student at Delta College.
  - Submit a completed Student Application and Skills Inventory Questionnaire, which can be downloaded from our website @ [www.delta.edu/coop](http://www.delta.edu/coop).
  - Submit most recent transcript and current resume.
  - Attend a 45-minute orientation session.
  - Enroll in and complete the required ACE courses once hired into an Academic Career Experience position.
- File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
- Delta College reserves the right to modify graduation requirements.



## Accounting

*Career Pathway: Business, Management,  
Marketing and Technology*



### Certificate of Achievement/Advanced Certificate/Associate in Business Studies Degree

As a graduate of Delta's Accounting associate degree program, you will have the skills to be an accounting assistant. Complexity of the work will vary with the size and volume of the employee's activities and the firm's procedures. Most starting jobs will involve tasks such as keeping records of day-to-day business transactions, making entries in account ledgers, monitoring cash receipts and disbursements, processing appropriate budgetary costing procedures, and preparing materials needed for financial reports. As you gain experience, you may assume more accounting responsibilities which could involve analyzing financial reports and advising management.

#### Sem Hrs

#### Certificate of Achievement

*>	ACC	211	Principles of Accounting I .....	4
*>	ACC	212	Principles of Accounting II .....	4
*>	CST	133	Computer Concepts & Competencies .....	4
>	MGT	153	Introduction to Business .....	3
>2	---	---	Accounting Core Course (listed under Associate Degree Requirements below) .....	3/4
Total Credits Required For Certificate Of Achievement				18/19

#### Advanced Certificate

			Accounting Certificate of Achievement .....	18/19
*>	ACC	214	Microcomputer Accounting Applications .....	4
*>	OAT	151	Business Communication I .....	3
>2	---	---	Accounting Core Course (listed under Associate Degree Requirements below) .....	3/4
---	---	---	Additional credits required for Advanced Certificate .....	10/11
Total Credits Required For Advanced Certificate				28/30

#### Additional Requirements for Associate Degree

			Accounting Advanced Certificate .....	28/30
---	---	---	Additional core credits (listed below) required for Associates Degree .....	8/10

#### Accounting Core Courses (All Core Courses must be completed to earn the Accounting ABS Degree.)

*	ACC	215	Federal Tax Accounting .....	3
*	ACC	227	Intermediate Accounting I .....	4
*	ACC	228	Intermediate Accounting II .....	4
*	ACC	233	Cost Accounting .....	3
\$	ACC	285	Accounting Research and Application .....	2
Subtotal				38

#### General Education Courses

ECN	221	Principles of Economics I .....	4
LW	---	Any 1 Credit LW Course (As of fall 2007) .....	1
<b>AND</b>			
LWA	---	Any 1 Credit LWA Course .....	1
<b>OR</b>			
LW	---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
PHL	203	Business Ethics .....	3
<b>OR</b>			
PHL	210	Information Technology Ethics & Law .....	(2)
POL	---	Any Approved Government Requirement .....	3/4
PSY	101	Applied Psychology .....	3
<b>OR</b>			
COM	112	Fundamentals of Oral Communication .....	(3)
<b>OR</b>			
COM	114	Interpersonal Communication .....	(3)
---	---	General Electives .....	5
Subtotal			19/21

#### Other Business Requirements

Business Law I .....				3
*	OAT	152	Business Communication II .....	3
OR				
*	ENG	111	Any College Composition I .....	(3/5)
AND				
*	ENG	112	Any College Composition II .....	OR (3/5)
*	ENG	113	Technical Communication .....	(3)
Subtotal				6/13
Total Credits Required For Associate Degree				63/72

#### Notations:

**\*A "C" (2.0) minimum grade is required in each asterisked course.**

**> A Certificate will be awarded when courses preceded by a greater than (">") sign are successfully completed.**

**\$ Key Course: Key courses must be completed within 5 years of completing certificate or degree. Failure to complete within the stated time frame will require you to repeat this course. See graduation requirements page.**

1. The above program is primarily intended to prepare you for a career upon graduation from Delta College. If you plan to transfer to a four-year college or university other than Northwood University, you should use a Business Administration program guide and consult a counselor.
2. A different accounting core course must be taken to complete each certificate.
3. Proficiency in keyboarding is expected in many classes. OAT 170 is available for those students who need to build keyboarding skills. Proficiency exams are available for OAT 170.
4. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
5. Delta College reserves the right to modify graduation requirements.
6. If you plan to pursue an advanced degree, see pages 25-28 for special transfer agreements.

## Alternative Energy - Wind Turbine

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



### Options:

#### Alternative Energy/Wind Turbine Technology

#### Associate in Applied Science Degree

The Associate Degree Program in Alternative Energy/Wind Turbine Technology prepares you for employment as a wind turbine technician. Duties of a wind turbine technician include operating and maintaining giant wind turbine units, performing mechanical and electrical troubleshooting, as well as repair and preventative maintenance. This technician uses computers and has an understanding of hydraulics, electricity, algebra, and meteorology. Working about 250 feet above the ground requires this professional to set aside any fears of heights. Teamwork is key to success in this position where safety and a smooth-running work environment are critical.

#### Sem Hrs

#### General Education Courses

ENG ---	Any Approved College Composition I Course .....	3/5
ENG 113	Technical Communication.....	3
LW ---	Any 1 Credit LW Course (As of fall 2007) .....	1
<b>AND</b>		
LWA ---	Any 1 Credit LWA Course .....	1
<b>OR</b>		
LW ---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
LWT 165	Community First Aid .....	1
* MTH 119	Intermediate Algebra .....	4
* GEO 103	Introduction To Meteorology .....	4
* PHY ---	Any Physics .....	4/5
POL ---	Any Approved American Government Requirement.....	3/4
Subtotal		24/28

#### Basic Program Requirements

* CST 133	Computer Concepts & Competencies .....	4
* CST 161	Networking Essentials .....	2
* ET 110	DC Electrical Fundamentals .....	3
* ET 120	AC Electrical Fundamentals .....	3
* ET 122	Programmable Logic Controllers .....	4
* ET 130	Advanced Electrical Applications .....	3
* ET 140	Fundamentals of Electrical Motors and Motor Controls .....	3
* MT 151	Mechanical Drives .....	3
* MT 161	Industrial Rigging .....	2
* MT 220	Hydraulics & Pneumatics I .....	3
Subtotal		30

#### Wind Turbine Technology Courses

* WTT 100	Introduction to Wind Energy .....	3
* WTT 110	Climb Safety, Tower Rescue, and OSHA 10 Safety Training..	2
* WTT 120	Wind Turbine Mechanical Systems .....	3
* WTT 215	Wind Turbine Blade Design .....	2
* WTT 230	Wind Turbine Schematics .....	1
* WTT 240	Power Generation, Transmission, and Distribution .....	3
* WTT 280	Fundamentals of Data Acquisition .....	2
Subtotal		16
Total Credits Required For Associate Degree		70/74

### Notations:

\* A "C" minimum grade is required in each asterisked course.

1. If WTT courses are completed through a partnership with another college, additional courses may be necessary to earn the associate degree.
2. You will be required to get instructor permission before enrolling in this program. Students will be admitted into the WTT sequence courses in groups of 8 students. These courses may be offered off-site and may require travel out of State. Contact the Technical Trades and Manufacturing division at 989-686-9258 for more information.
3. Student is responsible for equipment, tools, and gear as required. Cost may exceed \$200.
4. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
5. Delta College reserves the right to modify graduation requirements.
6. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



# Architectural Technology

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



## Associate in Applied Science Degree

As an Architectural Technician, you may assist licensed architects, construction engineers, urban planners and other design personnel in most phases of the development of building or site projects. This program has an emphasis on job entry skill development for employment in occupations such as: draftsman, for installation and shop drawings; building appraiser for financial institutions or real estate firms, estimator or supervisor for contractors; inspector for government agencies.

		Sem Hrs
<b>General Education Courses</b>		
	ART 111 Drawing I .....	3
2	ARC 251 History of Architecture .....	2
	ENG --- Any Approved College Composition I Course .....	3/5
5	ENG --- Any Approved College Composition II Course .....	3/5
<b>OR</b>		
5	ENG 113 Technical Communication.....	(3)
	LW 220 Lifelong Wellness .....	1
<b>AND</b>		
	LWA --- Any 1 Credit LWA Course .....	1
<b>OR</b>		
	LW --- Any 2 Credit LW Course (As of fall 2007).....	(2)
	MTH --- Any Approved Intermediate Algebra Course .....	4
	POL --- Any Approved American Government Requirement.....	3/4
	--- --- Approved Electives (see list below).....	3/4
	<b>Subtotal</b>	<b>23/29</b>
<b>Basic Program Requirements</b>		
>4*	ACE 285 Internship: Design Technology .....	1
	ARC 101 Materials and Methods of Construction.....	3
1	ARC 105 Architectural Drafting I .....	4
1	ARC 106 Architectural Drafting II .....	4
	ARC 111 Mechanical and Electrical Systems for Buildings .....	3
<b>OR</b>		
	RC 206 Plumbing, Heating, and Electrical Equipment .....	(3)
	ARC 114 Architectural AutoCAD 2D Basics.....	2
	ARC 118 AutoCAD Applications .....	3
	ARC 204 Estimating Building Construction.....	3
1	ARC 205 Architectural Drafting III .....	3
1	ARC 206 Architectural Drafting IV.....	3
	ARC 211 Elements of Structural Design .....	2
	ARC 214 Architectural AutoCAD 3D Basics.....	3
	ARC 221 Site Preparation.....	3
	RC 101 Construction Print Interpretation .....	3
	<b>Subtotal</b>	<b>40</b>

## Approved Electives

ARC 314	Architectural Rendering Basics .....	3
ART 100	Elements of Color Photography.....	3
ART 101	Photography I .....	3
ART 102	Photography II .....	3
ART 112	Drawing II .....	3
ART 115	Design I .....	3
ART 116	Design II .....	3
ART 206	Digital Photography .....	3
CST ---	Any Computer Science & Information Technology Course.....	1/4
ENT 131	Entrepreneurship/Small Business Management I .....	3
MGT 145	Principles of Sales .....	3
MGT 153	Introduction to Business .....	3
MGT 251	Business Law I .....	<b>OR</b> 3
ENT 221	Law for Entrepreneurs .....	(3)
MTH ---	Any Math Course (121 or higher) .....	3/4
RC ---	Any Residential Construction Course that is not co-listed.....	

Total Credits Required For Associate Degree 63/69

## Notations:

\* **A "C" (2.0) minimum grade is required in each asterisked course.**

1. Courses ARC 105, 106, 205, 206 must be taken in sequential order. For information about day and/or evening availability of courses, contact a technical career counselor.
2. ARC 251 is offered only in the Winter Semester.
3. This program prepares you for a technical level career, but some courses are transferable to baccalaureate degree programs in Architecture. If you want to be an architect, you are advised to consult with a counselor about transfer requirements.
4. In a ladder program, ACE 285 is only required to be taken one time.
5. Students planning to transfer should take any approved College Composition II requirement.
6. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
7. Delta College reserves the right to modify graduation requirements.
8. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

## Art + Design

Career Pathway: Arts and Communications



### Associate in Fine Arts Degree

The Associate in Fine Arts Degree is offered as an Art Track and Design Track. Basic program requirements are the same for both tracks, therefore, you will select one or the other at the end of your first year. Both programs begin to prepare you for a creative career in any of the following areas: art education, art history, art theory and criticism, ceramics, design, digital imaging, drawing, graphics, painting, photography, printmaking, sculpture, or a wide variety of other visual art fields. You may choose to transfer to a four-year college or university to pursue advanced degrees in Art or Design such as a Bachelor of Arts (B.A.), Bachelor of Fine Arts (B.F.A.), Master of Fine Arts (M.F.A.), or a Ph.D. in Art History, Art Theory, or Art Criticism. Advanced degree programs are available throughout the country.

As an artist, you will generate your own ideas and realize your work in one or more media. You may participate in local, regional, national, and possibly international exhibits. Your work might be shown in galleries, museums, and/or on Internet galleries. You may generate income from private sales of your work and/or from public works projects in places such as airports, public museums, and county, state, or federal buildings.

As a designer, you will either be self-employed or design for a company in any of the following areas: advertising, graphic design, prints, commercial video, animation or movie production. You may design cars, displays, fashion, furniture, industrial products, textiles, web pages or any number of other commercial or Internet products.

Following this career pathway leading to K-12 or post-secondary teaching will require you to pursue an M.F.A. in art or Design, a Ph.D. in Art History, or a combined advanced degree. As an art critic, theorist or historian, you will research and write about art and events in the art world for newspapers, magazines, books, educational institutions, and other venues.

	Sem Hrs
<b>Basic Program Requirements</b>	
* ART 111 Drawing I .....	3
* ART 115 Design I .....	3
* ART 116 Design II .....	3
* ART 151 Art History and Appreciation I .....	3
* ART 152 Art History and Appreciation II .....	3
* ART 271 Digital Imaging I .....	3
<b>Subtotal</b>	<b>18</b>

Art Track or Design Track: Choose One

#### Art Track

* ART 101 Photography I .....	3
* ART 112 Drawing II .....	3
* ART 217 Painting I .....	3
* ART 222 Sculpture .....	<b>OR</b> 3
* ART 231 Ceramics I .....	(3)
* ART 255 Contemporary Art History .....	3
* Strongly Recommended Electives .....	0/5
<b>Subtotal</b>	<b>15/20</b>

#### Design Track

* ART 267 Producing A Student Publication (Capstone course) .....	3
* ART 276 Electronic Page Design .....	3
* ART 277 Illustration - Digital Media .....	3
* ART 279 Web Page Design Arts .....	3
* ART 284 Typography .....	3
* ART 288 Digital Imaging II .....	3
* Strongly Recommended Electives .....	0/2
<b>Subtotal</b>	<b>18/20</b>

### Strongly Recommended Electives: (choose 0/5 credits from the list below)

* ART 101 Photography I .....	3
* ART 102 Photography II .....	3
* ART 112 Drawing II .....	3
* ART 206 Digital Photography .....	3
* ART 210 Figure Drawing .....	3
* ART 217 Painting I .....	3
* ART 218 Painting II .....	3
* ART 222 Sculpture .....	3
* ART 231 Ceramics I .....	3
* ART 232 Ceramics II .....	3
* ART 253 History of Graphic Design .....	3
* ART 255 Contemporary Art History .....	3
* ART 261 Contemporary Art in Chicago .....	<b>OR</b> 2
* IHU 261 Contemporary Art in Chicago .....	(2)
* ART 274 Digital Painting .....	3
* ART 276 Electronic Page Design .....	3
* ART 277 Illustration - Digital Media .....	3
* ART 279 Web Page Design Arts .....	3
* ART 280 Printmaking I, Past & Present .....	3
* ART 284 Typography .....	3
* ART 285 Digital Animation and Interactive Design .....	3
* ART 288 Digital Imaging II .....	3
* ART 289 New Media .....	3
* ART 290-299 .....	Special Projects in Art
	1-3
<b>Subtotal</b>	<b>0/5</b>

### General Education Courses

ENG --- Any Approved College Composition I Course .....	3/5
ENG --- Any Approved College Composition II Course .....	3/5
Humanities Elective other than ART .....	1/3
Recommended for Design Track: PHL 205W .....	(3)
LW --- Any 1 Credit LW Course (As of fall 2007) .....	<b>AND</b> 1
LWA --- Any 1 Credit LWA Course .....	1
<b>OR</b>	
LW --- Any 2 Credit LW Course (As of fall 2007) .....	(2)
POL --- Any Approved American Government Requirement .....	3/4
Recommended: POL 104W .....	(4)
1 Social Science Electives .....	4/5
Recommended: ECN 221W, GEO 113W, HIS 111W, HIS 112W, PSY 211WSOC 230W, or SSI 234W .....	(4)
1 Natural Science Electives .....	8
<b>Subtotal</b>	<b>24/32</b>
<b>Total Credits Required For Associate Degree</b>	<b>62/70</b>

### Notations:

#### \* A "C" minimum grade is required in each asterisked course.

1. See the "Group Requirements" of the Graduation Requirements on page --- of this catalog for approved courses. You may qualify for MACRAO. Apply online or at the Registrar's Office.
2. File an application for an associate or dual degree and/or certificate with the Registrar's Office by mid-semester of the final semester of your course work. See pages --- for other graduation requirements.
3. Delta College reserves the right to modify graduation requirements.
4. If you plan to pursue an advanced degree, see pages --- for special transfer agreements.
5. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
6. Delta College reserves the right to modify graduation requirements.
7. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

## Automotive Service Educational Program

*Career Pathway: Engineering/Manufacturing  
and Industrial Technology*



### Associate in Applied Science Degree

The GMAutomotive Service Educational Program (ASEP) is an associate degree automotive program designed to upgrade your technical competence and professional level to an incoming dealership technician. At Delta College, the program requires 111 weeks of training to complete. Approximately 60 of those weeks are spent on the Delta College campus. The remainder of the time spent in this two-year period is in a General Motors dealership or an AC Delco Total Service Support (TSS) repair facility. Each specialized subject is dealt with in the classroom and laboratory on campus and is immediately followed by related work experience in the dealership/TSS. This rotation system continues until the program is completed. This is a suggested enrollment sequence for full time students. It is suggested that part time students see an advisor for scheduling assistance. NOTE: There is a special application for this program and each student is required to be sponsored by a General Motors dealership or an AC Delco repair facility. For more information, please contact ASEP Coordinator: (989) 686-9594

#### Sem Hrs

The automotive courses must be taken in the the semesters specified.

#### First Semester (Fall)

	AGM 110	Automotive Electronics Service .....	4
	AGM 112	Engine Service .....	6
	AGM 114	Brakes, ABS, TCS Service .....	5
1	AGM 134	Dealership Work Experience I .....	2
	COM 114	Interpersonal Communication.....	3
Subtotal			20

#### Second Semester (SP/Summer)

	AGM 212	Suspension System Service.....	7
	AGM 142	Electronic Engine and Emission Controls Service.....	9
1	AGM 143	Dealership Work Experience II .....	2
	AGM 238	GM Information Systems .....	2
	LW ---	Any 1 Credit LW Course (As of fall 2007).....	1
Subtotal			21

#### Third Semester (Winter)

	AGM 216	Driveline Service.....	6
	AGM 218	Automatic Electronic Transmission Service.....	8
1	AGM 234	Dealership Work Experience III .....	2
	ENG ---	Any Approved College Composition I Course .....	3/5
Subtotal			19/21

#### Fourth Semester (Fall)

	AGM 210	Body Electronics Service.....	3
	AGM 214	Heating/Air Conditioning.....	5
	WELD101	Exploratory Oxy-Fuel Welding and Cutting .....	1
	ENG ---	Any Approved College Composition II Course .....	3/5

#### OR

	ENG 113	Technical Communication.....	(3)
	LWA ---	Any 1 Credit LWA Course.....	1
	POL ---	Any Approved American Government Requirement.....	3/4
Subtotal			16/19

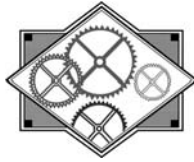
Total Credits Required For Associate Degree 76/81

#### Notations:

1. These courses are taught at a dealership/AC Delco TSS Center and begin late in the semester indicated and are completed in the following semester.
2. Since half of the program is spent at the dealership/TSS, you are required to have a sponsoring General Motors dealer or an AC Delco TSS Center. The main responsibility of the dealership/TSS is to provide employment during all of the work experience periods.
3. All tuition, fees, housing (if needed), textbook costs, and tools are your responsibility.
4. For more information call ASEP Coordinator (989) 686-9594, Fax (989) 667-2207.
5. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
6. Delta College reserves the right to modify graduation requirements.
7. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

# Automotive Service Technology

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



## Associate in Applied Science Degree/ Advanced Certificate

In addition to being trained to enter the automotive field as a technician or service writer, you will have a broader based education by completing the associate degree. You may also choose to continue your education by seeking a baccalaureate degree. Both certificate and associate degree are available.

	Sem Hrs
<b>Automotive Service Courses Introductory Automotive</b>	
* AUT 100 Introduction to Automotive Service.....	3
* AUT 108 Automotive Electronics.....	3
Subtotal	6
<b>1st Semester (Fall)</b>	
*1, 3 AUT 110 Automotive Electronics Service.....	4
*1, 3 AUT 112 Engine Service.....	6
*1, 3 AUT 114 Brake System Service.....	5
1st Semester Total	15
<b>2nd Semester (Winter)</b>	
*1, 3 AUT 210 Body Electronics Service.....	3
*1, 3 AUT 212 Suspension System Service.....	7
*1, 3 AUT 214 Heating/Air Conditioning Service.....	5
2nd Semester Total	15
<b>3rd Semester (Fall)</b>	
3 AUT 216 Driveline Service.....	6
3 AUT 218 Automatic Electronic Transmission Service.....	8
3rd Semester Total	14
<b>4th Semester (Winter)</b>	
3 AUT 226 Advance Engine Electronics & Fuel System Service.....	7
3 AUT 228 Electronic Engine Performance & Emission Control.....	7
4th Semester Total	14
<b>General Education Courses</b>	
ENG --- Any Approved College Composition I Course.....	3/5
ENG 113 Technical Communication.....	3
ENV 130 Pollution Prevention.....	1
MGT 110 Business Mathematics.....	3
LW --- Any Lifelong Wellness Course.....	1
<b>AND</b>	
LWA --- Any 1 Credit LWA Course.....	1
<b>OR</b>	
LW --- Any 2 Credit LW Course (As of fall 2007).....	(2)
POL --- Any Approved American Government Requirement.....	3/4
PSY 101 Applied Psychology.....	3
<b>OR</b>	
COM 112 Fundamentals of Oral Communication.....	(3)
Subtotal	18/21
<b>Elective--not required for degree</b>	
AUT 239 Automotive Service Information Systems.....	1
AUT 252 Automotive Performance Fundamentals.....	5
Subtotal	6
<b>Certificate Requirements</b>	
* AUT 100 Introduction to Automotive Service.....	3
* AUT 108 Introductory Automotive Electronics.....	3
3 AUT Semesters 1, 2, 3 and 4.....	58
AUT 261 Auto Service Skills Internship I.....	1
ENV 130 Pollution Prevention.....	1
Minimum Credits Required For Certificate	66

## Associate Degree Requirements

* AUT 100 Introduction to Automotive Service.....	3
* AUT 108 Introductory Automotive Electronics.....	3
3 (AUT ---) Courses above AUT 100 & 108.....	58
2 AUT 261 Auto Service Skills Internship I.....	1
<b>AND</b>	
2 AUT 262 Auto Service Skills Internship II.....	1
General Education Courses.....	18/21
Minimum Credits Required For Associates Degree	84/87

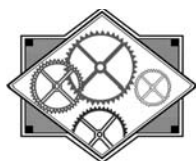
## Notations:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. Semester 1 & 2 courses must be completed before taking Semester 3 or 4.
- 2. The selection of an Automotive Service Skills Internship (AUT 261, 262) is done after consulting with the automotive faculty. The student will be responsible for obtaining the place of employment for the internships which must be acceptable by Delta College. Two internships are required for an associates degree. One internship is required for a certificate.
- 3. The Associate Degree requires completion of four semesters (8 ASE areas) plus two internships and the general education courses. The Certificate requires the completion of four semesters plus one internship and ENV-130W.
- 4. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
- 5. Delta College reserves the right to modify graduation requirements.
- 6. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



# Aviation Flight Technology

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



## Associate in Applied Science Degree

You will obtain the knowledge, skill and a portion of the aeronautical experience\* necessary to meet the requirements for a Commercial Pilot Certificate (airplane category) and an Instrument Rating. You will be prepared to transfer to a baccalaureate institution with degree programs for professional pilots.

You must arrange and pay for additional aeronautical experience (flight hours) to meet Federal Aviation Regulations, Part 61, requirements for Commercial Pilot.

	Sem Hrs
<b>General Education Courses</b>	
COM 114 Interpersonal Communication.....	3
CST 133 Computer Concepts & Competencies .....	4
ENG --- Any Approved College Composition I Course .....	3/5
ENG --- Any Approved College Composition II Course .....	3/5
<b>OR</b>	
ENG 113 Technical Communication.....	(3)
GEO 111 Physical Geography .....	4
MTH --- Any Approved Intermediate Algebra Course (or higher Math course)	4
LW --- Any 1 Credit LW Course.....	1
<b>AND</b>	
LWA --- Any 1 Credit LWA Course.....	1
<b>OR</b>	
LW --- Any 2 Credit LW Course.....	(2)
POL --- Any Approved American Government Requirement.....	3/4
PSY 211 General Psychology .....	4
# Humanities Electives .....	5
Subtotal	35/40
<b>Basic Program Requirements</b>	
^* AFT 101 Private Pilot Ground Training.....	4
^* AFT 105 Primary Pilot Flight Training I.....	2
^* AFT 106 Primary Pilot Flight Training II.....	3
^* AFT 201 Instrument Pilot Ground Training.....	4
* AFT 202 Aviation Meteorology .....	2
^* AFT 210 Commercial Pilot Ground Training.....	4
^* AFT 215 Advanced Pilot Flight Training I.....	2
^* AFT 216 Advanced Pilot Flight Training II.....	3
^* AFT 217 Advanced Pilot Flight Training III.....	2
^* AFT 218 Advanced Pilot Flight Training IV.....	3
* GEO 103 Introduction to Meteorology .....	4
Subtotal	33
<b>Recommended Electives</b>	
CHM 101 General Chemistry I.....	5
MTH 160 Calculus for the Social and Managerial Sciences .....	4
PHY 101 Applied Physics .....	4
PHY 111 General Physics I .....	4
Subtotal	17
Total Credits Required For Associate Degree	68/73

## Notations:

# Check transfer school requirements in the selection of the five hours Humanities Requirements.

\* A "C" (2.0) minimum grade is required in each asterisked course.

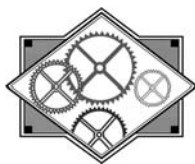
^ Courses preceded by a (^) sign indicate that students may apply for credit in AFT 101, AFT 105, and AFT 106 if they present a valid Private Pilot's License, Driver's License, and Medical Certificate to the appropriate Division Chair. Credit for AFT 201, AFT 215, and AFT 216 may be granted for a valid Instrumentation Rating. Credit in AFT 210, AFT 217, and AFT 218 may be granted for a valid Commercial Pilot Certificate.

1. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
2. Delta College reserves the right to modify graduation requirements.
3. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



# Chemical Process Technology

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



## Associate in Applied Science Degree/ Advanced Certificate

The Associate Degree Program in Chemical Process Technology prepares the student for employment as a process operator in the chemical/material processing industry. The operator role includes but is not limited to the following functions: knowledge and upholding of the standards regarding health, safety and the environment; working with the handling, transporting, storage and disposal of chemicals and other materials in compliance with all state and federal regulations; the operation, monitoring, and controlling of process both continuous and batch; interfacing with chemical engineers and technician co-workers involved with these processes; managing normal maintenance of equipment, calibration of instrumentation, and troubleshooting as needed.

### Sem Hrs

#### General Education Courses

>*3	CHM 105	Technical Chemistry I .....	5
>*3	CHM 106	Technical Chemistry II .....	5
	COM 112	Fundamentals of Oral Communication .....	3
		<b>OR</b>	
	COM 114	Interpersonal Communication .....	(3)
>	ENG ---	Any Approved College Composition I Course .....	3/5
		<b>AND</b>	
	ENG ---	Any Approved College Composition II Course .....	<b>OR</b> 3/5
	ENG 113	Technical Communication .....	(3)
>	ENV 100	Environmental Regulations .....	3
	ENV 152	Emergency Response To Industrial Spills .....	1.6
	LW ---	Any 1 Credit LW Course (As of fall 2007) .....	1
		<b>AND</b>	
	LWA ---	Any 1 Credit LWA Course .....	1
		<b>OR</b>	
	LW ---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
>*2	MTH ---	Any Approved Intermediate Algebra Course (or higher Math course)	4
	MTH 208	Elementary Statistics .....	3
>*2,4	PHY 101	Applied Physics .....	<b>OR</b> 4
	PHY 111	General Physics I .....	<b>OR</b> (4)
	PHY 211	Physics I .....	(5)
	POL ---	Any Approved American Government Requirement .....	3/4
		<b>Subtotal</b>	<b>39.6/45.6</b>

#### Basic Program Requirements

*>	CPI 110	Introduction To Chemical Process Industries .....	2
*>	CPI 120	Introduction To Process Operations .....	2
*>	CPI 210	Basic Chemical And Unit Operations .....	4
*>	CPI 220	Process Measurement .....	3
*	CPI 230	Process Control .....	3
*	CPI 240	Process Troubleshooting .....	3
*	CPI 250	Advanced Chemical Operations .....	4
*	CPI 260	Process Operations Management .....	4
		<b>Subtotal</b>	<b>25</b>

#### Recommended Electives

1	CST 133	Computer Concepts & Competencies .....	4
		<b>Subtotal</b>	<b>4</b>

Total Credits Required For Certificate 35/38  
Total Credits Required For Associate Degree 64.6/70.6

### Notations:

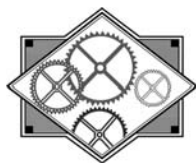
\* A "C" (2.0) or better minimum grade required in each asterisked course.

>CERTIFICATE OPTION: A certificate will be awarded when you successfully complete courses preceded by a greater than sign ">" (35 credits)

1. If your computer experience is limited, CST 133 is suggested.
2. This requirement may also be met with an acceptable score on current college assessment instruments. Contact Assessment/Testing office at 989-686-9338 for more details. Credits to meet graduation requirements may then be met by completing additional electives.
3. Transfer students may be advised to complete CHM 111, CHM 112, CHM 210, and CHM 210L as a substitute for CHM 105 and CHM 106.
4. Transfer students may be advised to complete either PHY 111 or PHY 211 as a substitute for PHY 101.
5. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
6. Delta College reserves the right to modify graduation requirements.
7. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

# Chemical Technology

*Career Pathway: Engineering/Manufacturing  
and Industrial Technology*



## Associate in Applied Science Degree

A degree in Chemical Technology may transfer or could lead to a position with area employers as a Technologist. As a Chemical Technologist, you will operate many kinds of laboratory instruments, be involved with data collection and analysis, and do technical report writing and research projects. This Associate in Applied Science program includes core courses that allow flexibility in choosing a technical focus. Degrees in Water/Wastewater Treatment Technology, Chemistry, Biology, Physics or Engineering may also be pursued using most of the credits from this program.

### Sem Hrs

#### Core Program Requirements

1	CT 100	Introduction To Chemical Technology .....	2
	CHM 111	General and Inorganic Chemistry I .....	5
	CHM 112	General and Inorganic Chemistry II .....	5
	CHM 210	Organic Chemistry I .....	4
	CHM 210L	Organic Chemistry I Laboratory .....	1
	CHM 220	Organic Chemistry II .....	4
	CHM 220L	Organic Chemistry II Laboratory .....	1
	CHM 230	Chemical Analysis/Instrumentation .....	4
	CHM 231	Troubleshooting For Analytical Instrumentation .....	1
2	SCI 250	Research Project In Science .....	2/6
Subtotal			29/33

#### General Education Courses

	COM 112	Fundamentals of Oral Communication .....	3
OR			
	COM 114	Interpersonal Communication .....	(3)
	CST 133	Computer Concepts & Competencies .....	4
OR			
	CST 134	Micro Computers in Business Using MS Office .....	(3)
	ENG ---	Any Approved College Composition I Course .....	3/5
	ENG 113	Technical Communication .....	3
	MTH 208	Elementary Statistics .....	3
	LW ---	Any 1 Credit LW Course (As of fall 2007) .....	1
AND			
	LWA ---	Any 1 Credit LWA Course .....	1
OR			
	LW ---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
3,7	PHY 101	Applied Physics .....	4
OR			
3	PHY 111	General Physics I .....	(4)
OR			
3	PHY 211	Physics I .....	(5)
	PHY 112	General Physics II .....	4
OR			
	PHY 212	Physics II .....	(5)
OR			
	BIO 110	Environmental Science .....	(4)
OR			
	BIO 111	Principles of Biology .....	(4)
OR			
	BIO 111H	Principles of Biology - Honors .....	(4)
OR			
	GLG 130	Environmental Geology .....	(4)
	POL ---	Any Approved American Government Requirement .....	3/4
4	---	Humanities Elective .....	5
5	---	Social Science Elective .....	4/5
Subtotal			37/44

### Recommended Electives

CHM 221	Organic Biochemistry .....	3
MTH 121	Plane Trigonometry .....	3
MTH 151	Pre-Calculus Mathematics .....	4
MTH 161	Analytic Geometry and Calculus I (and higher) .....	4
WET 110	Water Treatment Technologies .....	3
WET 112	Wastewater Treatment Technology .....	3
WET 220	Water Microbiology .....	3

Total Credits Required For Associate Degree 66/77

### Notations:

1. It is highly recommended that students take CT 100 early in their coursework.
2. A minimum of two credits is required for SCI 250. However, in consultation with faculty, a research project for up to 6 credits may be chosen.
3. May transfer as Physics or Science credit only, depending on the institution.
4. Courses must be completed in at least two different subject areas. Consult this catalog for a list of approved Humanities courses.
5. You may be eligible for MACRAO credit. Consult the current catalog for MACRAO requirements. Industry recommends enrollment in ECN 221 and POL 104 to fulfill the 8 credits required in Social Science.
6. To have the MACRAO stamp placed on your transcript, fill out a MACRAO Request Form at the Records Office with the Graduation Request.
7. PHY 101 is not recommended for students who wish to take PHY 112 or PHY 212. Students wishing to take PHY 112 should enroll in PHY 111. Students wishing to take PHY 212 should enroll in PHY 211.
8. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
9. Delta College reserves the right to modify graduation requirements.
10. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



# Child Development

Career Pathway: Human Services



## Options:

**Child Development-Educational  
Paraprofessional**

## Associate in Applied Arts Degree/ Advanced Certificate/Certificate of Achievement

Child development teachers work in a variety of settings providing care and guidance of young children. This includes concern for the mental, social, physical, and emotional growth and development of the child. As a child development teacher, you should be able to work under supervision and work cooperatively with other personnel. Each employee should gain the respect, confidence, and cooperation of children, maintain discipline, and enforce as well as deal with emergency situations calmly. Physically, you must maintain good health and be able to stoop, kneel, crouch, and crawl. Good vision and hearing are necessary as well as being able to lift up to 40 pounds. Applicants for child development positions are required to pass a tuberculin test and physical bi-annually, and may have to undergo tests or immunization for other communicable diseases. A DHS clearance for child abuse/neglect is required.

The Educational Paraprofessional Certificate of Achievement is designed to assist students in obtaining the skills necessary to work as paraprofessionals in pre-K and early elementary classrooms. This certificate stresses the importance of understanding child and family diversity, special needs populations, and developmentally appropriate discipline. By completing the certificate, a student can supplement the Advanced Certificate or Associate in Applied Arts degree or use it to directly gain employment.

The Child Development Advanced Certificate prepares students for positions as assistant teachers or teachers in early childhood education and care programs. Students learn to plan and implement high quality, developmentally appropriate programs for all ages of children, infants through school-age, in both centers and family child care homes.

As a supplement to the supportive skills learned from courses completed in the Educational Paraprofessional Certificate of Achievement or Child Development Advanced Certificate programs, the Associate in Applied Arts degree program will also stress leadership skills that are needed in a director position. In addition to the employment opportunities offered by the certificate program, graduates of this degree program will also be qualified to apply for positions as lead teachers and center directors as well as apply for a license for their own child care business.

The curriculum for each program is aligned with the standards issued by the National Association for the Education of Young Children.

## Sem Hrs

### General Education Courses

ENG	---	Any Approved College Composition I Course .....	3/5
ENG	---	Any Approved College Composition II Course .....	3/5
LW	---	Any 1 Credit LW Course (As of fall 2007) .....	1
<b>AND</b>			
LWA	---	Any 1 Credit LWA Course .....	1
<b>OR</b>			
LW	---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
POL	---	Any Approved American Government Requirement .....	3/4
1	---	Humanities Electives .....	8
1	---	Natural Science Electives .....	8
<b>Subtotal</b>			<b>27/32</b>

### Educational Paraprofessional Certificate of Achievement

>>*	CD	109	Introduction to the Educational Paraprofessional .....	2
>>*	CD	113	Child Guidance Strategies .....	4
>>*	CD	116	Diversity and Families in Early Childhood Education .....	3
>>*	ED	201	Education of the Exceptional Child .....	3
<b>Subtotal</b>				<b>12</b>

### Basic Program Requirements

>*\$2,3,4	CD	110	Infant/Toddler Development .....	4
>*\$2	CD	111	Introduction to Early Childhood Education .....	3
>*	CD	112	Learning Center Activities .....	3

>*\$3,4	CD	113	Child Guidance Strategies .....	4
>*\$2,3,4	CD	115P	Introductory Community Practicum .....	3
>*	CD	116	Diversity and Families in Early Childhood Education .....	3
>*\$3,4	CD	117	Student Teaching Practicum .....	6
*5,6	CD	210	Child Care Program Management .....	3
>*	ED	201	Education of the Exceptional Child .....	3
>*6	LWT	165	Community First Aid .....	1
>*1	PSY	223	Child Psychology .....	3
<b>Subtotal</b>				<b>36</b>

Total Credits Required For Educational Paraprofessional Cert. Of Achievement	12
Total Credits Required For Child Development Advanced Certificate	33
Total Credits Required For Associate Degree	63/68

## Notations:

**\*A "C" (2.0) minimum grade is required in each asterisked (\*) course.**

**\$ Key Course: Key courses must be completed within 5 years of completing certificate or degree. Failure to complete within the stated time frame will require you to repeat this course. See graduation requirements page.**

**> Child Development Advanced Certificate Option: An advanced certificate will be awarded to you when you successfully complete courses preceded by the ">" sign.**

**>> Educational Paraprofessional Certificate of Achievement: A certificate of achievement will be awarded to you when you successfully complete courses preceded by the ">>" sign.**

- Requires courses in two different departments. Suggested Humanities Electives: COM 114, Interpersonal Communications and one chosen from LIT 251, Children's Literature or LIT 253, Books for Pre-School Children.
  - CD 111W and CD 115PW may be articulated if the student has earned a CDA credential (Center-based Preschool and Family Child Care CDAs), an elementary education degree or a high school career-technical certificate. CD 110W and CD 111W may be articulated if the student has earned a Center-based Infant Toddler CDA credential. Articulated credits will not count towards DHS requirements for a director using a CDA certificate. The 18 required credits for a child care director must be regular classes with a grade for credit.
  - CD 110W, CD 113W, CD 115PW, and CD 117W students only: A Child Development information session is held in November, April and August. You must attend one of these sessions. Be sure you notify the Counseling Office to state your major as CD.
  - All CD 110W, 113W 115PW, and CD 117W students must complete the following and submit the appropriate documentation to the program coordinator:
    - Physical (Health Appraisal): You will be required to submit a completed recent physical form signed by a licensed physician declaring, to the best of the physician's knowledge, that you are physically capable of performing the duties that are required for the safe care of children.
    - TB Skin Test: You must submit evidence of freedom from communicable tuberculosis.
    - Acknowledgment and Release Form: You will be required to sign a document asking whether you have ever been convicted of an offense other than a minor traffic violation, and whether you have ever been involved in substantiated abuse or neglect of children. (DHS child abuse/neglect clearance check)
    - Student Data Sheet
    - Employment and Volunteer Contract
- Note: CD 110W and CD 113W each require 30 hours of volunteer work at a licensed childcare program. CD 115PW requires 90 hours and CD 117W requires 150 hours of teaching in a licensed program other than your current employment site. CD 115PW and CD 117W must be unpaid and outside of your work schedule. More information will be given at the information sessions.
- CD 210W, Child Development Program Management must be taken after all other Child Development courses have been completed.
  - Current First Aid and CPR certification is required to enroll in CD 210W.
  - File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 44 for other graduation requirements.
  - Delta College reserves the right to modify graduation requirements.
  - If you plan to pursue an advanced degree, see page 25 for special transfer agreements.

## Computer Aided Drafting

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



### Advanced Certificate

As a computer drafter, you will make detailed manual or computer drawings of products and machinery from sketches and specifications conceived by engineers and designers. The finished drawings are used as working plans for engineering and manufacturing purposes. Depending on experience and level of responsibility, duties may vary from preparing basic drawings to modifying the finished design using computer aided design equipment.

In order to enter this area of work, you should be able to: work within precise limits or standards of accuracy, concentrate for long periods of time, visualize 3-dimensional objects from drawings or pictures, see detail in objects or drawings, and recognize slight differences in shapes and shadings. Computer skills are a requirement.

	Sem Hrs
<b>Required Courses</b>	
* ACE 285 Internship: Design Technology .....	1
*\$ CAD 114 Introduction to CAD .....	2
*\$ CAD 120 Introduction to CAM .....	3
*\$ CAD 214 CAD Techniques .....	3
*\$ CAD 226 3D Parametric Solid Modeling .....	3
* CNC 162 Computer Numerical Control Theory .....	4
* DRF 104 Basic Mechanical Design .....	4
<b>OR</b>	
* DRF 105 Beginning Mechanical Drafting .....	(3)
* DRF 107 Intermediate Mechanical Design .....	3
* DRF 128 Geometric Tolerancing .....	2
* MIT 111 Manufacturing Processes .....	3
* MS 113 Machining Processes .....	2
* MTH --- Any Approved Intermediate Algebra Course .....	4
<b>OR</b>	
* MT 110 Machine Tool Calculations .....	(4)

Total Credits Required For Certificate 33/34

### Notations:

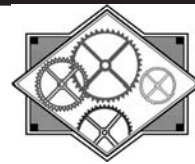
\* A "C" minimum grade is required in each asterisked course.

**\$ Key Course:** Key courses must be completed within 5 years of completing certificate or degree. Failure to complete within the stated time frame will require you to repeat this course. See graduation requirements page.

1. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
2. Delta College reserves the right to modify graduation requirements.

## Computer Numerical Control

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



### Advanced Certificate

As a CNC Machine Tool Programmer/Operator, you will use computer driven machine tools such as lathes, mills, lasers, water jet, wire and/or sinker electrical discharge machines, tube benders, punches, brakes, and grinders to shape materials to precise dimensions. Although some programmer/operators can work with a wide variety of CNC machine tools, most specialize in one or two types. Specific duties may include: studying blueprints or sketches; building tooling, jigs, or fixtures; programming and editing; machine work pieces; inspecting and certifying product for dimensional accuracy; and light duty repair and maintenance of the CNC machine. Many of the CNC courses listed below require prior basic machine tool work experience and/or high school or skill center classes in basic machine tools.

Program Requirements	Sem Hrs
* MS 114 Industrial Technology Machine Tools .....	3
<b>OR</b>	
* SKTR 182 Machine Tool Lab II .....	(3)
* MS 120 Machinery's Handbook .....	3
<b>OR</b>	
* SKTR 183 Machinery's Handbook .....	(3)
* MT 110 Machine Tool Calculations .....	4
<b>OR</b>	
* SKMA 103 Applied Geometry and Trigonometry .....	(4)
* DRF 128 Geometric Tolerancing .....	2
<b>OR</b>	
* SKDR 128 Geometric Tolerancing .....	(2)
* DRF 104 Basic Mechanical Design .....	4
<b>OR</b>	
* DRF 105 Beginning Mechanical Design .....	(3)
<b>OR</b>	
* DRF 121 Blueprint Reading .....	(3)
<b>OR</b>	
* SKDR 101 Sketching and Blueprint Reading .....	(4)
* CNC 162 Computer Numerical Control Theory .....	4
<b>OR</b>	
* SKCN 162 Computer Numerical Control Theory .....	(4)
*\$ CAD 120 Introduction to CAM .....	3
<b>OR</b>	
*\$ SKCA 120 Introduction to CAM .....	(3)
* MS 130 Machine Tools I .....	6
* CNC 216 CNC with Machining Applications .....	4
<b>OR</b>	
* SKCN 216 CNC with Machining Applications .....	(4)
*\$ CNC 225 Mastercam .....	4
<b>OR</b>	
*\$ SKCN 225 Mastercam .....	(4)
* CNC 285 Computer Numerical Control Capstone Course .....	4
<b>OR</b>	
* SKCN 285 Computer Numerical Control Capstone Course .....	(4)

### Continuing Education Elective

* MS 230 Machine Tools II .....	6
Subtotal	6
Total Credits Required For Certificate	40/41

### Notations:

\* A "C" minimum grade is required in each asterisked course.

**\$ Key Course:** Key courses must be completed within 5 years of completing certificate or degree. Failure to complete within the stated time frame will require you to repeat this course. See graduation requirements page.

1. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
2. Delta College reserves the right to modify graduation requirements.

# Computer Science and Information Technology - BIT

*Career Pathway: Business, Management, Marketing and Technology*



## Associate in Business Studies Degree

A degree in Business and Information Technology includes both business skills and computer skills to prepare you for work in a high-tech business world.

All courses needed to complete the Associate in Business Studies degree in Computer Science and Information Technology-Business and Information Technology can be completed online except for where indicated.

Sem Hrs

### Requirements for Business and Information Technology Degree

* ACC 211	Principles of Accounting I .....	4
*\$ CST 103	Windows Foundations .....	1
* CST 104	Microsoft Word Foundations .....	1
* CST 110	Web Page Development Using HTML .....	1
* CST 115	e-Commerce Concepts .....	3
*\$ CST 123	Windows Operating System .....	1
*\$ CST 133	Computer Concepts & Competencies .....	4
* CST 135	Help Desk Fundamentals .....	1
*\$ CST 147	Presentation Graphics Using PowerPoint .....	2
*\$ CST 155	Microsoft EXCEL .....	3
*\$ CST 171	Visual BASIC Programming I .....	2
*\$ CST 204	Microsoft Word: Intermediate .....	2
*\$ CST 235	Systems Analysis and Design .....	3
*\$ CST 257	Database MS Access .....	3
ENT 131	Entrepreneurship/Small Business Management I .....	3
* MGT 110	Business Mathematics .....	3
* MGT 153	Introduction to Business .....	3
MGT 256	Human Resources Management I .....	3
MGT 274	Computer Aided Decisions .....	2
	SELECT ELECTIVES FROM BELOW: .....	7
ACC 212	Principles of Accounting II .....	(4)
2 ACE ---	Academic Career Experience .....	(1-4)
2 CST 105	Outlook .....	(1)
	CST Elective .....	(1-6)
ENT 132	Entrepreneurship/Small Business Management II .....	(3)
MGT 143	Principles of Advertising .....	(3)
MGT 245	Principles of Management .....	(3)
	Subtotal .....	52

### General Education Courses

LW ---	Any 1 Credit LW Course (As of fall 2007) .....	1
	<b>AND</b>	
3 LWA ---	Any 1 Credit LWA Course .....	1
	<b>OR</b>	
2 LW ---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
OAT 151	Business Communication I .....	<b>AND</b> 3
2 OAT 152	Business Communication II .....	3
	<b>OR</b>	
ENG 111	Any College Composition I .....	<b>AND</b> (3/5)
ENG 112	Any College Composition II .....	<b>OR</b> (3/5)
ENG 113	Technical Communication .....	(3)
POL ---	Any Approved American Government Requirement .....	3/4
PHL 203	Business Ethics .....	3
	Subtotal .....	14/19
	Total Credits Required For Associate Degree .....	66/71

### Notations:

**\$ This key course must be successfully completed within 5 years of graduation.**

**\* A "C" minimum grade is required in each asterisked course.**

1. Proficiency in keyboarding is expected in all CST classes. OAT 170 is available for those students who need to build keyboarding skills.
2. This course is not currently available as an online course.
3. Contact the Health & Wellness Division for information on completing the LWA credit through Individual Instruction to complete the BIT degree option online.
4. The above curricula are intended to prepare you for a career upon graduation from Delta College. If you are planning to transfer to a Baccalaureate degree program you should consult with a counselor before enrolling in computer, business, or general education courses so that specific transfer college requirements can be completed.
5. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
6. Delta College reserves the right to modify graduation requirements.
7. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



# Computer Science and Information Technology - CA

*Career Pathway: Business, Management, Marketing and Technology*



## Associate in Business Studies Degree/ Advanced Certificate

A specialist in Computer Applications has proficiency in a broad set of computer applications including word processing, spreadsheets, communications (Internet), database, and graphics.

All courses for the Associate in Business Studies Computer Science and Information Technology-Computer Applications can be completed online except where indicated.

	Sem Hrs
<b>Requirements for Computer Applications Certificate/ABS Degree</b>	
>*\$ CST 103 Windows Foundations .....	1
>* CST 104 Microsoft Word Foundations .....	1
>* CST 106 Internet Foundations .....	1
>* CST 110 Web Page Development Using HTML .....	1
>* CST 120 PC Operating System Command Line Interface (DOS) .....	1
>*\$ CST 123 Windows Operating System .....	1
>*\$ CST 133 Computer Concepts & Competencies .....	4
>* CST 135 Help Desk Fundamentals .....	1
>*\$ CST 147 Presentation Graphics Using PowerPoint .....	2
>*\$ CST 155 Microsoft EXCEL .....	3
>2 CST 170 Principles of Computer Programming I .....	1
>* CST 171 Visual BASIC Programming I .....	2
>*\$ CST 204 Microsoft Word: Intermediate .....	2
>*\$ CST 257 Database MS Access .....	3
>* MGT 110 Business Mathematics .....	3
>* MGT 153 Introduction to Business .....	3
<b>Total For Advanced Certificate</b>	<b>30</b>

<b>Additional Business Core Requirements for Degree</b>	
*2 ACC 111 Introductory Accounting .....	OR 4
* ACC 211 Principles of Accounting I .....	(4)
* CST 161 Networking Fundamentals .....	3
+*\$ CST 216 Web Site Management .....	3
*2 CST 273 MS Applications Using Visual BASIC .....	2
<b>Subtotal</b>	<b>12</b>

<b>Approved Electives - Choose 9 credits from the list below</b>	
ACC 212 Principles of Accounting II .....	4
2 ACE --- Academic Career Experience .....	1-4
*2 ART 171 Digital Media for the Web .....	2
2 CST 105 Outlook .....	1
* CST 115 e-Commerce Concepts .....	3
*2 CST 146 Desktop Publishing .....	2
* CST 210 Advanced Web Page Development .....	2
ENT 131 Entrepreneurship/Small Business Management I .....	3
ENT 132 Entrepreneurship/Small Business Management II .....	3
MGT 143 Principles of Advertising .....	3
<b>Subtotal</b>	<b>9</b>

<b>General Education Courses:</b>	
2 COM 112 Fundamentals of Oral Communication .....	3
<b>OR</b>	
COM 114 Interpersonal Communication .....	(3)
LW --- Any 1 Credit LW Course (As of fall 2007) .....	1
<b>AND</b>	
3 LWA --- Any 1 Credit LWA Course .....	1
<b>OR</b>	
2 LW --- Any 2 Credit LW Course (As of fall 2007) .....	(2)
OAT 151 Business Communication I .....	<b>AND 3</b>
2 OAT 152 Business Communication II .....	3
<b>OR</b>	
ENG 111 College Composition I .....	<b>AND (3/5)</b>
ENG 112 College Composition II .....	<b>OR (3/5)</b>
ENG 113 Technical Communication .....	(3)
POL --- Any Approved American Government Requirement .....	3/4
2 PHL 210 Information Technology Ethics & Law .....	2
<b>Subtotal</b>	<b>16/21</b>
<b>Total Credits Required For Associate Degree</b>	<b>67/72</b>

### Notations:

**\$ This key course must be successfully completed within 5 years of graduation.**

**> This course is required for the corresponding academic certificate.**

**\* A "C" minimum grade is required in each asterisked course.**

**+ This course requires a prerequisite of ART 171.**

1. Proficiency in keyboarding is expected in all CST classes. OAT 170 is available for those students who need to build keyboarding skills.
2. This course is not currently available as an online course and cannot be used to complete the Associate in Business Studies Computer Science and Information Technology - Computer Applications degree online.
3. Contact the Health & Wellness Division for information on completing the LWA credit through Individual Instruction to complete the CA degree option online.
4. The above curricula are intended to prepare you for a career upon graduation from Delta College. If you are planning to transfer to a Baccalaureate degree program you should consult with a counselor before enrolling in computer, business, or general education courses so that specific transfer college requirements can be completed.
5. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
6. Delta College reserves the right to modify graduation requirements.
7. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

# Computer Science And Information Technology - IST

Career Pathway: Business, Management, Marketing and Technology



## Options:

IST/Criminal Technology  
IST/Financial Security  
IST/Information Assurance

## Associate in Applied Science Degree/Post Associate Certificate

The following three tracks are designed to prepare you for challenging positions in the rapidly growing field of Information Security and Technology.

Track 1: Criminal Technology covers the legal side of securing information as well as the technological side, by combining Criminal Justice classes with CST networking classes.

Track 2: Financial Security provides the skills and knowledge to assess, protect, and recover financial information in financial systems.

Track 3: Information Assurance provides the skills and knowledge to protect, and if necessary, recover information from an information system.

	Sem Hrs
<b>General Education Requirements</b>	
COM 112 Fundamentals of Oral Communication .....	3
OR	
COM 114 Interpersonal Communication .....	(3)
LW --- Any 1 Credit LW Course (As of fall 2007) .....	1
AND	
LWA --- Any 1 Credit LWA Course .....	1
OR	
LW --- Any 2 Credit LW Course (As of fall 2007) .....	(2)
MTH --- Any Approved Intermediate Algebra Course .....	4
* OAT 151 Business Communication I .....	3
AND	
* OAT 152 Business Communication II .....	3
OR	
* ENG --- Any Approved College Composition I Course .....	(3/5)
AND	
* ENG --- Any Approved College Composition II Course .....	OR (3/5)
* ENG 113 Technical Communication .....	(3)
PHL 210 Information Technology Ethics & Law .....	2
POL --- Any Approved American Government Requirement .....	3/4
PSY 211 General Psychology .....	4
Subtotal	24/29

## Core Courses Required for all Degree Options

* CST 120 PC Operating System Command Line Interface (DOS) .....	1
* CST 133 Computer Concepts & Competencies .....	4
*\$ CST 161 Networking Fundamentals .....	3
*\$ CST 260 Routing Protocols and Concepts .....	3
*\$ CST 266 Information Security .....	4
Subtotal	15

## Track 1: Criminal Technology

### Requirements for IST/Criminal Technology Degree

* CJ 110 Introduction to Criminal Justice .....	3
* CJ 182 Introduction to Security .....	3
* CJ 210 Introduction to Criminal Investigation .....	3
* CJ 211 Private Security and Investigative Methods .....	3
* CJ 215 Introduction to Homeland Security .....	3
* CJ 220 Crime Laboratory Techniques .....	3
*\$ CST 126 Unix/Linux Operating System .....	2
*\$ CST 128 PC Hardware Concepts and Troubleshooting .....	4
*\$ CST 228 Advanced PC Troubleshooting (A+) .....	4
*\$2 CST 267 Introduction to Computer Forensics .....	3
*\$ Choose 2/3 credits from Group I Electives .....	2/3
*\$ Choose 3 credits from Group II Electives .....	3
Subtotal	36/37

## Track 2: Financial Security

### Requirements for IST/Financial Security Degree

* ACC 211 Principles of Accounting I .....	4
* ACC 212 Principles of Accounting II .....	4
*\$ ACC 227 Intermediate Accounting I .....	4
*\$ ACC 228 Intermediate Accounting II .....	4
* ACC 233 Cost Accounting .....	3
* ACC 235 Financial Management .....	3
CJ 110 Introduction to Criminal Justice .....	3
*\$ CST 155 Microsoft EXCEL .....	3
*\$ CST 235 Systems Analysis and Design .....	3
*\$ CST 257 Database MS Access .....	3
MGT 153 Introduction to Business .....	3
MGT 251 Business Law I .....	3
Subtotal	40

## Track 3: Information Assurance

### Requirements for IST/Information Assurance Degree

* CST 126 Unix/Linux Operating System .....	2
* CST 128 PC Hardware Concepts and Troubleshooting .....	4
* CST 150 Information Security Policies, Procedures, and Fundamentals .....	3
* CST 152 Implementing Network Security .....	3
*\$ CST 153 Implementing Firewalls .....	3
* CST 154 Incident Response and Disaster Recovery .....	3
*\$ CST 156 Implementing Wireless Security .....	3
* CST 158 Network Intrusion Security Testing .....	3
*\$2 CST 164 LAN Switching and Wireless .....	3
*\$2 CST 264 Accessing the WAN .....	3
Choose 5/7 credits from Group I Electives .....	5/7
Choose 3 credits from Group II Electives .....	3
Subtotal	38/40

Choose credits from the following groups according to option requirements:

### Group I Electives

*\$ CST 159 Introduction to Oracle Database Management .....	2
*\$ CST 162 Introduction to Novell Network Administration .....	2
*\$ CST 163 Introduction to Windows Network Administration .....	2
*\$ CST 164 LAN Switching and Wireless .....	3
*\$ CST 165 Linux Networking I .....	3

### Group II Electives

*\$ CST 259 Advanced Oracle Database Management .....	3
*\$ CST 262 Advanced Novell Networking .....	3
*\$ CST 263 Advanced Microsoft Networking .....	3
*\$ CST 264 Accessing the WAN .....	3
*\$ CST 265 Linux Networking II .....	3
*\$ CST 267 Introduction to Computer Forensics .....	3

Post Associate Degree Certificates may be earned by completing requirements below:

### Requirements for IST/Criminal Technology Post Associate Certificate

*> CJ 187 Current Issues in Security .....	3
*> CJ 270 Evidence and Criminal Procedure .....	3
*> CJ 271 Criminal Law .....	3
*> CST 235 Systems Analysis and Design .....	3
*> MTH 120 Finite Mathematics .....	3

Total Credits Required For Post Degree Certificate

15

### Requirements for IST/Financial Security Post Associate Certificate

*\$> ACC 214 Microcomputer Accounting Applications .....	4
*> ACC 215 Federal Tax Accounting .....	3
*\$> CST 128 PC Hardware Concepts and Troubleshooting .....	4
*\$>2 CST 267 Introduction to Computer Forensics .....	3
*> MGT 245 Principles of Management .....	3
*> MTH 208 Elementary Statistics .....	3

Total Credits Required For Post Degree Certificate

20

Total Credits Required For Ist/criminal Technology Degree Option

75/81

Total Credits Required For Ist/financial Security Degree Option

79/84

Total Credits Required For Ist/information Assurance Degree Option

77/84

**Notations:**

\* A "C" minimum grade is required in each asterisked course.

\$ **Key Course:** Key courses must be completed within 5 years of completing certificate or degree. Failure to complete within the stated time frame will require you to repeat this course.

> **A post associate certificate will be awarded when you successfully complete courses preceded by the ">" sign.**

1. Proficiency in keyboarding is expected in all CST classes. OAT 170 is available for those students who need to build keyboarding skills.
2. The course selected as required within a specific degree option cannot be used as an elective within the degree or post associate certificate.
3. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
4. Delta College reserves the right to modify graduation requirements.
5. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



# Computer Science and Information Technology - NT

Career Pathway: Business, Management,  
Marketing and Technology



## Associate in Applied Science Degree/ Advanced Certificate

A degree in Network Technology provides you with the skills for configuring and managing a system of interconnected computers that communicate with one another and share applications, data, and hardware components.

	Sem Hrs
<b>Requirements for Network Technology Certificate/AAS Degree</b>	
> CST 120 PC Operating System Command Line Interface (DOS) .....	1
> CST 123 Windows Operating System .....	1
> CST 126 Unix/Linux Operating System .....	2
>* CST 128 PC Hardware Concepts and Troubleshooting .....	4
> CST 133 Computer Concepts & Competencies .....	4
>* CST 161 Networking Fundamentals .....	3
> CST 170 Principles of Computer Programming I .....	1
>* CST 260 Routing Protocols and Concepts .....	3
Select from Database Management/Networking Electives below .....	9
Select from Advanced Database Management/Networking Electives below .....	3
Select from other CST/BIT Electives below .....	2/4
Total Credits Required For Advanced Certificate	33/35

<b>Additional Business Core Requirements for Degree</b>	
ACC 211 Principles of Accounting I .....	4
* CST 235 Systems Analysis and Design .....	3
*\$ CST 266 Information Security .....	4
2*\$ Select from Advanced Database Management/Networking Electives below .....	3
Subtotal	14

<b>General Education Courses</b>	
COM 112 Fundamentals of Oral Communication .....	3
OR	
COM 114 Interpersonal Communication .....	(3)
ENG 111 Any College Composition I .....	AND 3/5
ENG 112 Any College Composition II .....	OR 3/5
ENG 113 Technical Communication .....	(3)
OR	
OAT 151 Business Communication I .....	AND (3)
OAT 152 Business Communication II .....	(3)
LW --- Any 1 Credit LW Course (As of fall 2007) .....	1
AND	
LWA --- Any 1 Credit LWA Course .....	1
OR	
LW --- Any 2 Credit LW Course (As of fall 2007) .....	(2)
MTH --- Any Approved Intermediate Algebra Course .....	4
PHL 210 Information Technology Ethics & Law .....	2
POL --- Any Approved American Government Requirement .....	3/4
Subtotal	20/25

<b>&gt; Database Management/Networking Electives (choose 8/9 credits for the Advanced Certificate)</b>	
>\$ CST 159 Introduction to Oracle Database Management .....	2
>\$ CST 162 Introduction to Novell Network Administration .....	2
>\$ CST 163 Introduction to Windows Network Administration .....	2
>\$ CST 164 LAN Switching and Wireless .....	3
>\$ CST 165 Linux Networking I .....	3

Choose 3 semester hours of Advanced Database Management/Networking Electives for the Advanced Certificate and an additional 3 hours for the Associate Degree.

<b>&gt; Advanced Database Management/Networking Electives</b>	
>\$ CST 259 Advanced Oracle Database Management .....	3
>\$ CST 262 Advanced Novell Networking .....	3
>\$ CST 263 Advanced Microsoft Networking .....	3
>\$ CST 264 Accessing the WAN .....	3
>\$ CST 265 Linux Networking II .....	3
>\$ CST 269 Cisco Security .....	3

<b>&gt; Other CST/BIT Electives (2/4 semester hours)</b>	
*\$2 CST 147 Presentation Graphics Using PowerPoint .....	2
*\$2 CST 155 Microsoft EXCEL .....	3
*\$2 CST 228 Advanced PC Troubleshooting (A+) .....	4
*\$2 CST 257 Database MS Access .....	3
*\$2 MGT 153 Introduction to Business .....	3
*\$2 MGT 245 Principles of Management .....	3

Total Credits Required For Associate Degree 67/74

### Notations:

**\$ This key course must be successfully completed within 5 years of graduation.**

**> This course is required for the corresponding academic certificate.**

**\* A "C" minimum grade is required in each asterisked course.**

1. Proficiency in keyboarding is expected in all CST classes. OAT 170 is available for those students who need to build keyboarding skills.
2. The course selected as an elective for the associate degree cannot be the same course as selected for the corresponding advanced certificate.
3. The above curricula are intended to prepare you for a career upon graduation from Delta College. If you are planning to transfer to a Baccalaureate degree program you should consult with a counselor before enrolling in computer, business, or general education courses so that specific transfer college requirements can be completed.
4. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
5. Delta College reserves the right to modify graduation requirements.
6. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

# Computer Science And Information Technology - PC

Career Pathway: Business, Management, Marketing and Technology



## Associate in Applied Science Degree/ Advanced Certificate

As a graduate of the PC Systems Support & Technology program, you will be involved with the planning, installation, maintenance, and repair of computer hardware and software.

	Sem	Hrs
<b>Requirements for PC Systems Support and Technology Certificate/AAS Degree</b>		
> CJ 182 Introduction to Security .....	3	
> CST 120 PC Operating System Command Line Interface (DOS) .....	1	
> CST 123 Windows Operating System .....	1	
> CST 126 Unix/Linux Operating System .....	2	
>*\$ CST 128 PC Hardware Concepts and Troubleshooting .....	4	
>*\$ CST 133 Computer Concepts & Competencies .....	4	
>* CST 135 Help Desk Fundamentals .....	1	
>* CST 161 Networking Fundamentals .....	3	
>* CST 163 Introduction to Windows Network Administration .....	2	
>*\$ CST 228 Advanced PC Troubleshooting (A+) .....	4	
>*\$ CST 268 Special Topics in PC Support .....	2	
Total Credits Required For Advanced Certificate		27

<b>Additional Business Core Requirements for Degree</b>		
* ACC 211 Principles of Accounting I .....	4	
CST 170 Principles of Computer Programming I .....	1	
* CST 235 Systems Analysis and Design .....	3	
* MGT 110 Business Mathematics .....	3	
CST Network/Programming Electives (select from list below)		7
Related Electives (select from list below) .....	4/6	
Subtotal		22/24

<b>CST Network/Programming Electives (7 semester hours)</b>		
*\$ CST 159 Introduction to Oracle Database Management .....	2	
*\$ CST 162 Introduction to Novell Network Administration .....	2	
*\$ CST 164 LAN Switching and Wireless .....	3	
*\$ CST 165 Linux Networking I .....	3	
*\$ CST 171 Visual BASIC Programming I .....	2	
*\$ CST 177 Principles of Computer Programming II .....	1	
*\$ CST 180 C++ Programming .....	4	
*\$ CST 260 Routing Protocols and Concepts .....	3	
*\$ CST 263 Advanced Microsoft Networking .....	3	
*\$ CST 265 Linux Networking II .....	3	
*\$ CST 266 Information Security .....	4	
*\$ CST 267 Introduction to Computer Forensics .....	3	

<b>Related Electives (4 semester hours)</b>		
ACE --- Academic Career Experience .....	1-4	
ENT 131 Entrepreneurship/Small Business Management I .....	3	
ENT 132 Entrepreneurship/Small Business Management II .....	3	
MGT 153 Introduction to Business .....	3	
MGT 245 Principles of Management .....	3	
MIT 111 Manufacturing Processes .....	3	
QA 191 Quality Teamwork .....	1	
SKEL 101 Basic Electronics .....	6	

## General Education Courses

COM 112	Fundamentals of Oral Communication .....	3
<b>OR</b>		
COM 114	Interpersonal Communication .....	(3)
LW ---	Any 1 Credit LW Course (As of fall 2007) .....	1
<b>AND</b>		
LWA ---	Any 1 Credit LWA Course .....	1
<b>OR</b>		
LW ---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
OAT 151	Business Communication I .....	3
<b>AND</b>		
OAT 152	Business Communication II .....	3
<b>OR</b>		
ENG ---	Any Approved College Composition I Course .....	(3/5)
<b>AND</b>		
ENG ---	Any Approved College Composition II Course .....	<b>OR</b> (3/5)
ENG 113	Technical Communication .....	(3)
PHL 210	Information Technology Ethics & Law .....	2
POL ---	Any Approved American Government Requirement .....	3/4
Subtotal		16/21
Total Credits Required For Associate Degree		65/72

## Notations:

\* A "C" (2.0) minimum grade is required in each asterisked course.

\$ This key course must be successfully completed within 5 years of graduation.

> This course is required for the corresponding academic certificate.

1. Proficiency in keyboarding is expected in all CST classes. OAT 170 is available for those students who need to build keyboarding skills.
2. The above curricula are intended to prepare you for a career upon graduation from Delta College. If you are planning to transfer to a Baccalaureate degree program you should consult with a counselor before enrolling in computer, business, or general education courses so that specific transfer college requirements can be completed.
3. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
4. Delta College reserves the right to modify graduation requirements.
5. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

# Computer Science And Information Technology - Programming

Career Pathway: Business, Management, Marketing and Technology



## Associate in Applied Science Degree

A Programming degree prepares you for designing and building computer software using a variety of programming languages.

Sem Hrs

### Requirements for Programming AAS Degree

	ACC 211	Principles of Accounting I .....	4
*	CST 103	Windows Foundations .....	1
	CST 110	Web Page Development Using HTML .....	1
	CST 126	Unix/Linux Operating System .....	2
*	CST 133	Computer Concepts & Competencies .....	4
*	CST 155	Microsoft EXCEL .....	3
*	CST 170	Principles of Computer Programming I .....	1
*	CST 171	Visual BASIC Programming I .....	2
*	CST 177	Principles of Computer Programming II .....	1
*\$	CST 180	C++ Programming .....	4
*\$	CST 183	Java Programming .....	3
*	CST 186	Introduction to Game and Simulation Programming .....	2
*	CST 235	Systems Analysis and Design .....	3
*	CST 257	Database MS Access .....	3
*	CST 258	Introduction to Structured Query Language .....	1
*\$	CST 271	Visual Basic Programming II .....	3
*\$	CST 273	MS Applications Using Visual BASIC .....	2
*\$	CST 280	Advanced C++ Programming .....	4
Subtotal			44

### General Education Courses

	COM 112	Fundamentals of Oral Communication .....	3
OR			
	COM 114	Interpersonal Communication .....	(3)
	ENG 111	Any College Composition I .....	AND 3/5
	ENG 112	Any College Composition II .....	OR 3/5
	ENG 113	Technical Communication (Recommended) .....	(3)
OR			
	OAT 151	Business Communication I .....	AND (3)
	OAT 152	Business Communication II .....	(3)
	LW ---	Any 1 Credit LW Course (As of fall 2007) .....	1
AND			
	LWA ---	Any 1 Credit LWA Course .....	1
OR			
	LW ---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
*	MTH 118	Mathematical Explorations .....	4
OR			
*	MTH 119	Any Intermediate Algebra .....	(4)
	PHL 210	Information Technology Ethics & Law .....	2
	POL ---	Any Approved American Government Requirement .....	3/4
Subtotal			20/25
Total Credits Required For Associate Degree			64/69

### Notations:

\$ This key course must be successfully completed within 5 years of graduation.

\* A "C" minimum grade is required in each asterisked course.

1. Proficiency in keyboarding is expected in all CST classes. OAT 170 is available for those students who need to build keyboarding skills.
2. The above curricula are intended to prepare you for a career upon graduation from Delta College. If you are planning to transfer to a Baccalaureate degree program you should consult with a counselor before enrolling in computer, business, or general education courses so that specific transfer college requirements can be completed.
3. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
4. Delta College reserves the right to modify graduation requirements.
5. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



# Computer Science And Information Technology - WEB

Career Pathway: Business, Management, Marketing and Technology



## Associate in Applied Science Degree/ Advanced Certificate

A Web Information Technology Degree is focused on creating, maintaining, and managing web pages and web sites on the Internet.

	Sem Hrs
<b>General Education Core (see notation 2):</b>	
COM 112 Fundamentals of Oral Communication .....	3
OR	
COM 114 Interpersonal Communication.....	(3)
ENG 111 Any College Composition I .....	AND 3/5
ENG 112 Any College Composition II .....	OR 3/5
ENG 113 Technical Communication (Recommended).....	(3)
OR	
OAT 151 Business Communication I .....	AND (3)
OAT 152 Business Communication II .....	(3)
LW --- Any 1 Credit LW Course (As of fall 2007) .....	1
AND	
LWA --- Any 1 Credit LWA Course .....	1
OR	
LW --- Any 2 Credit LW Course (As of fall 2007) .....	(2)
* MTH 118 Mathematical Explorations .....	4
OR	
* MTH 119 Any Intermediate Algebra .....	(4)
PHL 210 Information Technology Ethics & Law .....	2
POL --- Any Approved American Government Requirement.....	3/4
Subtotal	20/25

## Core Degree Requirements

>* ART 115 Design I .....	3
>* ART 171 Digital Media for the Web .....	2
* ART 271 Digital Imaging I .....	3
* ART 284 Typography.....	3
>* ART 285 Digital Animation and Interactive Design .....	3
>* CST 110 Web Page Development Using HTML.....	1
>* CST 115 e-Commerce Concepts.....	3
> CST 126 Unix/Linux Operating System .....	2
>* CST 133 Computer Concepts & Competencies .....	4
> CST 170 Principles of Computer Programming I.....	1
* CST 171 Visual BASIC Programming I .....	2
>*\$ CST 210 Advanced Web Page Development.....	2
>*\$ CST 214 JavaScript Programming .....	2
>*\$ CST 216 Web Site Management .....	3
*\$ CST 217 Web Server Programming .....	3
*\$ CST 219 Web Site Deployment .....	2
* CST 257 Database MS Access .....	3
* CST 258 Introduction to Structured Query Language .....	1
Subtotal	43
Total Credits Required For Certificate	26
Total Credits Required For Associate Degree	63/68

## Notations:

**\$** This key course must be successfully completed within 5 years of graduation.

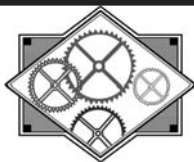
**>** This course is required for the corresponding academic certificate.

**\* A "C" minimum grade is required in each asterisked course.**

1. Proficiency in keyboarding is expected in all CST classes. OAT 170 is available for those students who need to build keyboarding skills.
2. The above curricula are intended to prepare you for a career upon graduation from Delta College. If you are planning to transfer to a Baccalaureate degree program you should consult with a counselor before enrolling in computer, business, or general education courses so that specific transfer college requirements can be completed.
3. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
4. Delta College reserves the right to modify graduation requirements.
5. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

# Construction Management

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



## Associate in Applied Science Degree

The Construction Management program is designed to acquaint you with management/business operations and knowledge of the practices and procedures relating to the construction industry. The construction course will acquaint you with various materials, procedures, types of fabrication, and methods of resolution. Technical problem solving will be stressed.

The business components of this program will teach you basic business structure and practices. Such training is invaluable in the start-up and maintenance of a profitable construction business. Other avenues of employment can be sought in construction supervision, material representation, and material management and control.

		Sem Hrs
<b>General Education Courses</b>		
COM 202	Oral Communication for Managers.....	3
LW 220	Lifelong Wellness .....	1
<b>AND</b>		
LWA ---	Any 1 Credit LWA Course.....	1
<b>OR</b>		
LW ---	Any 2 Credit LW Course (As of fall 2007).....	(2)
MTH 097	Algebra I .....	0
<b>OR</b>		
Demonstrate an acceptable score on the current College assessment instrument		
OAT 151	Business Communication I.....	3
OAT 152	Business Communication II.....	3
POL ---	Any Approved American Government Requirement.....	3/4
Subtotal		14/15
<b>Business Courses</b>		
ACC 111	Introductory Accounting.....	4
<b>OR</b>		
ACC 211	Principles of Accounting I.....	(4)
<b>OR</b>		
ENT 101	Accounting for Entrepreneurs.....	(3)
*2 ACE 280	Internship: Technology Management.....	1
CST 134	Micro Computers in Business Using MS Office.....	3
<b>OR</b>		
CST 133	Computer Concepts & Competencies .....	(4)
* ENT 131	Entrepreneurship/Small Business Management I .....	3
MGT 153	Introduction to Business .....	3
MGT 245	Principles of Management.....	3
MGT 251	Business Law I .....	3
<b>OR</b>		
ENT 221	Law for Entrepreneurs.....	(3)
Subtotal		19/21
<b>Basic Program Requirements</b>		
RC 101	Construction Print Interpretation.....	3
ARC 101	Materials and Methods of Construction.....	3
ARC 221	Site Preparation.....	3
RC 106	Concrete and Foundations .....	3
RC 108	Construction Safety .....	2
RC 200	Construction Contracting Rules and Regulations.....	3
ARC 204	Estimating Building Construction.....	3
ARC 111	Mechanical and Electrical Systems for Buildings .....	3
ARC 211	Elements of Structural Design .....	2
* RC 203	Residential CAD .....	3
Subtotal		28
Total Credits Required For Associate Degree		62/64

## Notations:

\* A "C" minimum grade is required in each asterisked course.

1. If you plan to pursue a 3+1 program in management please meet with a counselor/academic advisor prior to the start of your second year.
2. In a laddered program, ACE 280 is only required to be taken one time.
3. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
4. Delta College reserves the right to modify graduation requirements.
5. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



# Criminal Justice

Career Pathway: Human Services



## Options:

- Corrections
- Law Enforcement
- Law Enforcement With Basic Police Training (B.P.T.)
- Security/Loss Prevention Specialist

## Associate in Applied Arts Degree/Advanced Certificate/ Certificate of Achievement

The Delta College Criminal Justice program is designed to give you specialized knowledge of the criminal justice field combined with a broad general educational background. The program offers theoretical, practical, and technical instruction designed to meet an ever-increasing demand and continuous upgrading of personnel by law enforcement agencies. As a graduate of this program, depending on the option chosen, you would be prepared to seek employment as a police officer, corrections officer, conservation officer, public safety dispatcher, juvenile officer, private security, or prepare for careers in probation/parole/courts, federal government, CSI, detective, pre-law and many other related careers.

### Sem Hrs

#### General Education Core Courses

	COM 112	Fundamentals of Oral Communication .....	3
		OR	
	COM 114	Interpersonal Communication .....	(3)
		OR	
	COM 212	Listening .....	(3)
		OR	
	COM 222	Introduction to Acting .....	(3)
1	CST 133	Computer Concepts & Competencies .....	4
	ENG ---	Any Approved College Composition I Course .....	3/5
	ENG ---	Any Approved College Composition II Course .....	3/5
		OR	
	ENG 113	Technical Communication .....	(3)
2	LW ---	Any 1 Credit LW Course (As of fall 2007) .....	1
		AND	
2	LWA ---	Any 1 Credit LWA Course .....	1
		OR	
	LW ---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
1,9	OAT 170	Keyboarding .....	2
	POL 103	Any POL 103W American Government Course .....	3
		OR	
	POL 104	Any POL 104W American Government with Project Course ..	(4)
		OR	
	POL 212	State and Local Governments .....	(3)
	PSY 211	Any PSY 211W General Psychology Course .....	4
	SOC 211	Any SOC 211W Principles of Sociology Course .....	3
	SOC 215	Sociology of Minority Groups .....	3
		Subtotal	30/35

#### Corrections Option (See Notations 3,8)

*	CJ 110	Introduction to Criminal Justice .....	3
>*	CJ 130	Introduction to Corrections .....	3
>*	CJ 132	Client Relations in Corrections .....	3
>*	CJ 135	Correctional Institutions and Facilities .....	3
>*	CJ 233	Client Growth and Development .....	3
*	CJ 275	Probation and Parole .....	3
*	CJ 237	Jails & Local Detention .....	3
>*	CJ 238	Legal Issues in Corrections .....	3
	CJ 250	The Juvenile Offender .....	3
7	---	General Electives .....	0/5
		Subtotal	27/32

#### Security/Loss Prevention Specialist Option (See Notation 8)

*	ACC 211	Principles of Accounting I .....	4
>>>*	CJ 110	Introduction to Criminal Justice .....	3
>>>*	CJ 182	Introduction to Security .....	3

>>>*	CJ 187	Current Issues in Security .....	3
>>>*	CJ 211	Private Security and Investigative Methods .....	3
>>>*	CJ 215	Introduction to Homeland Security .....	3
>>>*	CJ 271	Criminal Law .....	3
	LWT 165	Community First Aid .....	1
*	MGT 251	Business Law I .....	3
7	---	General Electives .....	2/7
		Subtotal	28/33

#### Law Enforcement Option (See Notations 3,8)

*	CJ 110	Introduction to Criminal Justice .....	3
*	CJ 111	Police Administration .....	3
*	CJ 112	Police Operations .....	3
*	CJ 210	Introduction to Criminal Investigation .....	3
*4	CJ 220	Crime Laboratory Techniques .....	3
*	CJ 250	The Juvenile Offender .....	3
*	CJ 270	Evidence and Criminal Procedure .....	3
*	CJ 271	Criminal Law .....	3
7	---	Any Approved Natural Science Course with Lab .....	4/5
7	---	General Electives .....	3/4
		Subtotal	31/33

#### Law Enforcement with Basic Police Training (B.P.T.) Option (See Notations 5,8)

>>6	CJ 101	Police Recruit Training .....	6
*	CJ 110	Introduction to Criminal Justice .....	3
*	CJ 111	Police Administration .....	3
*	CJ 112	Police Operations .....	3
*	CJ 210	Introduction to Criminal Investigation .....	3
*4	CJ 220	Crime Laboratory Techniques .....	3
*	CJ 250	The Juvenile Offender .....	3
*	CJ 270	Evidence and Criminal Procedure .....	3
*	CJ 271	Criminal Law .....	3
>>6	OAT 153	Police Report Writing .....	1
>>6	LWA 280	Self-Defense/Fitness .....	2
>>6	LWT 175	Advanced First Aid and Emergency Care .....	3
---	---	Any Approved Natural Science Course with Lab .....	4/5
		Subtotal	40/41

Total Credits Required For Corrections Certificate 15

Total Credits Required For Security/Loss Prevention Certificate 18

Total Credits Required For Police Training Certificate 12

Total Credits Required For Associate Degree 62/76

#### Notations:

\* A "C" minimum grade is required in each asterisked course.

>Corrections Certificate Option - A certificate of achievement in Corrections will be awarded upon successful completion of these courses.

>> Police Training Certificate Option - A certificate of achievement in Basic Police Training will be awarded upon successful completion of these courses.

>>> Security/Loss Prevention Specialist Certificate Option - A certificate of achievement in Security/Loss Prevention Specialist will be awarded upon successful completion of these courses.

1. If proficiency can be demonstrated in these areas, additional electives may be substituted.
2. Not required if taking Law Enforcement Basic Police Training (B.P.T.) Option
3. This Criminal Justice Program does not certify you for employment as a police enforcement officer as it does not incorporate the Basic Police Training (B.P.T.) Program.
4. May substitute an approved natural science elective including MTH 119 or higher with a grade of "C" or better for CJ 220. Please refer to the MACRAO information in the catalog. Lab science credit in two different areas would be particularly useful for transferring to a 4-year school and is required in the fulfillment of the MACRAO agreement.
5. Students who plan to take the Basic Police Training (B.P.T.) should

see their counselor/advisor or contact the Criminal Justice Training Center (N-102, Main campus; phone (989) 686-9108).

6. CJ 101, OAT 153, LW 280, and LWT 175 are taken concurrently and together make up the Basic Police Training (B.P.T.) Academy. (12 credits) For information about B.P.T. contact the Criminal Justice Training Office. LW 280 fulfills the LW requirement for the Associate Degree.
7. You may be eligible for MACRAO credit. Please see MACRAO requirements in this section.
8. Employment within the Criminal Justice field may be delayed or denied depending on a history of convictions involving felonies, misdemeanors, and/or involving controlled substances.
9. Keyboarding waiver test is available for OAT 170. Contact the BIT Division office, 989-686-9127, to arrange for waiver test.
10. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
11. Delta College reserves the right to modify graduation requirements.
12. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



## Customer Energy Specialist

*Career Pathway: Engineering/Manufacturing  
and Industrial Technology*



### Options:

#### Customer Energy Specialist Certificate

#### Advanced Certificate

Special program for training Consumers Energy personnel. Not intended for general population.

		Sem Hrs
<b>1st Semester</b>		
CST 134	Micro Computers in Business Using MS Office .....	3
DRF 104	Basic Mechanical Design .....	4
<b>OR</b>		
DRF 105	Beginning Mechanical Design .....	(3)
ENG ---	Any Approved College Composition I Course .....	3/5
Subtotal		9/12
<b>2nd Semester</b>		
CAD 114	Introduction to CAD .....	2
1 ENG 113	Technical Communication .....	3
MGT 153	Introduction to Business .....	3
Subtotal		8
<b>3rd Semester</b>		
ACC 111	Introductory Accounting .....	4
1 CAD 214	CAD Techniques .....	3
1 MGT 243	Principles of Marketing .....	3
1 PHY 101	Applied Physics .....	4
Subtotal		14
<b>4th Semester</b>		
COM 114	Interpersonal Communication .....	3
MGT 251	Business Law I .....	3
1 SKMA 111	.....Applied Integrated Electrical Math I	6
Subtotal		12
2 EDD 130	Electric Distribution Design I .....	4
2 EDD 132	Electric Distribution Design II .....	4
Subtotal		8
<b>Additional Credits to Complete Associates in General Studies</b>		
POL ---	Any Approved American Government Requirement .....	3/4
--- ---	Elective credits (any 100 level course or above) .....	5/9
Subtotal		8/13
Total Credits Required For Certificate		51/54

### Notations:

1. Prerequisite/knowledge required - see current Delta College Catalog.
2. EDD 130 and 132 are courses taken through Consumers Energy. Upon completion of these "in house" classes, a certificate will be issued. A copy of this certificate must be turned into Records and Registration in order to receive college credit.
3. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
4. Delta College reserves the right to modify graduation requirements.

# Dental Assisting

Career Pathway: Health Science



## Associate in Applied Science Degree/ Advanced Certificate

As a graduate of this program, you will be prepared to assist the dentist as well as perform independent duties once you pass the RDA exam. Registered Dental Assistants in Michigan place and carve amalgam restorations; do selective coronal polishing; place sealants, fluoride, periodontal dressings, temporary crowns, dental dams, cavity liners and bases, orthodontic elastics and ligatures and arch wires; take impressions and radiographs; remove sutures; provide patient education; perform business office, laboratory and infection control duties. Upon completing this program, you are eligible to take the certification exam of the Dental Assisting National Board to become a Certified Dental Assistant (CDA) and the Michigan Department of Community Health exam to become a Registered Dental Assistant (RDA). This program is accredited by the Commission on Dental Accreditation of the American Dental Association.

	Sem	Hrs
<b>Core Prerequisite Courses</b>		
>^A BIO 140 Essentials Of Human Anatomy & Physiology .....		5
OR		
>^A BIO 152 Human Anatomy & Physiology I .....	(4)	
AND		
>^A BIO 153 Human Anatomy & Physiology II .....	(4)	
>^A COM 112 Fundamentals of Oral Communication .....	3	
OR		
>^A COM 114 Interpersonal Communication .....	(3)	
>^A ENG --- Any Approved College Composition I Course .....	3/5	
OR		
>^A8 OAT 151 Business Communication I .....	(3)	
Subtotal	11/16	

### Degree Completion Option - These courses must be taken in addition to the Core Prerequisite Courses

* ENG --- Any Approved College Composition II Course .....	3/5	
OR		
*8 OAT 152 Business Communication II .....	(3)	
* LW --- Any 1 Credit LW Course (As of fall 2007) .....	1	
AND		
* LWA --- Any 1 Credit LWA Course .....	1	
OR		
* LW --- Any 2 Credit LW Course (As of fall 2007) .....	(2)	
* POL --- Any Approved American Government Requirement .....	3/4	
* PSY 101 Applied Psychology .....	3	
OR		
* PSY 211 General Psychology .....	(4)	
Subtotal	11/15	

ONE-YEAR TRACK - The following courses must be taken in the sequence shown.

#### ONE-YEAR TRACK - FALL SEMESTER

>* DA 106 Infection Control .....	1
>* DA 110 Clinical Dental Assisting I .....	3
>* DA 110L Clinical Dental Assisting I Lab .....	4
>* DA 113 Oral Anatomy & Physiology .....	4
>* DA 114 Dental Materials I .....	2
>* DA 117 Dental Health and Nutrition .....	1
>*4 HSC 140 Basic Medical Emergencies .....	2
Subtotal	17

#### ONE-YEAR TRACK - WINTER SEMESTER

>* DA 120 Clinical Dental Assisting II .....	3
>* DA 120L Clinical Dental Assisting II Lab .....	4
>* DA 121 Clinical Practice .....	4
>* DA 123 Dental Radiology .....	2
>* DA 123L Dental Radiology Lab .....	2

>* DA 125 Dental Materials II .....	2
>* DA 125L Dental Materials II Lab .....	2
Subtotal	19

#### ONE-YEAR TRACK - SPRING SESSION

>* DA 129 Dental Office Management .....	3
>* DA 131 RDA Exam Prep .....	1
>* DA 131L RDA Exam Prep Lab .....	4
Subtotal	8

#### ONE-YEAR TRACK - SUMMER SESSION

>* DA 130 Dental Assisting Internship .....	6
>* DA 133 Dental Assisting Internship Seminar .....	1
Subtotal	7

TWO-YEAR TRACK - The following courses must be taken in the sequence shown.

#### TWO-YEAR TRACK FIRST YEAR - FALL SEMESTER

>* DA 113 Oral Anatomy & Physiology .....	4
>* DA 117 Dental Health and Nutrition .....	1
>*4 HSC 140 Basic Medical Emergencies .....	2
Subtotal	7

#### TWO-YEAR TRACK FIRST YEAR - WINTER SEMESTER

>* DA 123 Dental Radiology .....	2
>* DA 123L Dental Radiology Lab .....	2
Subtotal	4

#### TWO-YEAR TRACK FIRST YEAR - SPRING SESSION

>* DA 129 Dental Office Management .....	3
Subtotal	3

#### TWO-YEAR TRACK SECOND YEAR - FALL SEMESTER

>* DA 106 Infection Control .....	1
>* DA 110 Clinical Dental Assisting .....	3
>* DA 110L Clinical Dental Assisting I Lab .....	4
>* DA 114 Dental Materials I .....	2
Subtotal	10

#### TWO-YEAR TRACK SECOND YEAR - WINTER SEMESTER

>* DA 120 Clinical Dental Assisting II .....	3
>* DA 120L Clinical Dental Assisting II Lab .....	4
>* DA 121 Clinical Practice .....	4
>* DA 125 Dental Materials II .....	2
>* DA 125L Dental Materials II Lab .....	2
Subtotal	15

#### TWO-YEAR TRACK SECOND YEAR - SPRING SESSION

>* DA 131 RDA Exam Prep .....	1
>* DA 131L RDA Exam Prep Lab .....	4
Subtotal	5

#### TWO-YEAR TRACK SECOND YEAR - SUMMER SESSION

>* DA 130 Dental Assisting Internship .....	6
>* DA 133 Dental Assisting Internship Seminar .....	1
Subtotal	7

Total Credits Required For Certificate	62/67
Total Credits Required For Associate Degree	73/82

**Notations:**

**> A Certificate will be awarded when courses preceded by a greater than (“>”) sign are successfully completed.**

**\* A “C” minimum grade is required in each asterisked course.**

**^ Core prerequisite courses must be completed prior to taking any DA course.**

1. Due to the limited capacity of the Delta College dental facilities and the specific requirements of the Commission on Accreditation of Dental and Dental Auxiliary Educational Programs, enrollment is limited.
2. Once enrolled in the DA course sequence, you will be required to provide documentation of a current physical exam including a Hepatitis B and TB Carrier test prior to enrolling in any second semester course. A Hepatitis B vaccination is strongly recommended by the faculty and by the Commission on Dental Accreditation.
3. In addition to tuition, textbook costs, and supply costs, you must purchase laboratory attire and other infectious disease barriers. You must provide your own transportation to dental office facilities and internship office assignments. You must supply your own patients for DA 123L and DA 131L.
4. HSC 140 can be taken prior to enrollment in the program for CPR certification. However, if HSC 140 is taken prior to enrollment into the Dental Assisting program, you must maintain valid CPR certification for the second semester of the program and the sequential courses. It is also required for the Certification Exam and the Registered Dental Assistant Exam.
5. You must achieve a “C” (2.0) minimum grade in each DA course to be eligible to continue enrollment in this program.
6. Validation is not required for this Health program.
7. This program can be completed in a one-year track or a two-year track option. A limited number of two-year track seats are available each year. See the program coordinator for two-year track scheduling assistance.
8. Students who are seeking transfer credit to another college or university should take the approved English composition courses instead of the OAT courses; also BIO 152 and BIO 153 instead of BIO 140. Consult with the Counseling & Advising Center for help with your course selection.
9. File an application for an associate or dual degree and/or certificate with the Registrar’s Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
10. Delta College reserves the right to modify graduation requirements.
11. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



# Dental Hygiene

Career Pathway: Health Science



## Associate in Applied Science Degree

As a graduate of this program, you will have the knowledge and skills to provide preventive and therapeutic treatments and services prescribed by and under the supervision of the dentist. Specific responsibilities vary, depending on the law of the state where you are employed, but generally include: scaling and root debridement; application of topical fluoride and medicines for the prevention of tooth decay; taking impressions and preparing diagnostic models; expose, process and mount dental radiographs; provide instructions for patient self-care and nutritional counseling; and perform laboratory procedures. Upon successfully completing this program, you will be eligible to take the National, Regional and State Board Examinations for Dental Hygiene licensure, since Delta College's program is accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the U.S. Department of Education. This is a suggested enrollment sequence for all full-time students.

Sem Hrs

### General Education Courses

1, 3+ BIO 140	Essentials of Human Anatomy & Physiology .....	5
OR		
1,3* BIO 152	Human Anatomy & Physiology I .....	AND (4)
1,3* BIO 153	Human Anatomy & Physiology II .....	(4)
OR		
1,3* BIO 240	Human Anatomy .....	AND (4)
1,3* BIO 241	Physiology .....	(4)
3* BIO 203	General Microbiology .....	4
3* COM 112	Fundamentals of Oral Communication .....	3
OR		
3* COM 114	Interpersonal Communication .....	(3)
3,10* DH 100	Dental Hygiene Profession .....	1
3,9* DH 101	Dental Anatomy I .....	2
3* ENG ---	Any Approved College Composition I Course .....	3/5
3* ENG ---	Any Approved College Composition II Course .....	3/5
3* POL ---	Any Approved American Government Requirement .....	3/4
3* PSY 101	Applied Psychology .....	3
OR		
3* PSY 211	General Psychology .....	(4)
3* SOC 211	Principles of Sociology .....	3
Subtotal		30/39

Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application" and be officially validated. See Validation Procedures in this catalog for the required procedures.

### Clinical Course Sequence

#### First Semester (Fall)

* DH 110	Dental Infection Control .....	2
* DH 111	Oral Examinations .....	1
* DH 112	Medical Assessment/Emergencies .....	2
* DH 114	Oral Health .....	2
* DH 115	Clinical Techniques .....	5
* DH 116	Preventive Nutrition .....	3
* DH 118	Head and Neck Anatomy .....	3
Subtotal		18

#### Second Semester (Winter)

* DH 120	Periodontics I .....	3
* DH 121	Dental Hygiene Seminar I .....	2
* DH 122	Oral Histology and Embryology .....	3
* DH 123	Dental Radiography .....	2
*12 DH 123L	Dental Radiography Lab .....	1
* DH 124	Pharmacology For Dental Hygiene .....	2
* DH 125	Clinical Dental Hygiene I .....	4
11* LW 206A	Occupational Wellness 1 .....	1
Subtotal		18

#### Third Semester (Spring)

* DH 130	Management of Dental Pain and Anxiety in the Dental Office .....	3
* DH 131	Dental Hygiene Seminar II .....	1
* DH 135	Clinical Dental Hygiene II .....	3
11* LWA 206B	Occupational Wellness 2 .....	.5
Subtotal		7.5

#### Fourth Semester (Fall)

* DH 210	Periodontics II .....	2
* DH 213	Oral Pathology .....	3
* DH 214	Dental Materials .....	4
* DH 215	Clinical Dental Hygiene III .....	6
* DH 216	Community Dentistry I .....	2
* DH 219	Case Study Documentation I .....	.5
Subtotal		17.5

#### Fifth Semester (Winter)

* DH 222	Case Study Documentation .....	1.5
* DH 225	Clinical Dental Hygiene IV .....	6
* DH 227	Community Dentistry II .....	1
* DH 228	Dental Hygiene Seminar III .....	1
* DH 229	Seminar on Practical Exam .....	2
11* LWA 206C	Occupational Wellness 3 .....	.5
Subtotal		12.0

Total Credits Required For Associate Degree 103/112

#### Notations:

\* A "C" minimum grade is required in each asterisked course.

+ A "B" minimum grade is required.

1. It is highly recommended that you make an appointment with the Health and Wellness Counselor to go over the prerequisites and discuss your career choice prior to starting your prerequisites.
2. A maximum of 18 students will be accepted each fall semester for the Dental Hygiene courses.
3. Prerequisite qualifications are: a) high school graduate or GED equivalent; b) be admitted to Delta College; c) submit to Delta College complete transcripts from high school and other colleges attended; d) successfully complete prerequisite courses; e) follow the validation procedures as outlined in this catalog.
4. Dental Hygiene courses are offered mostly during day hours and must be taken together in the sequence shown. You must achieve a minimum "C" (2.0) grade in each Dental Hygiene course to be eligible to continue in the program.

5. After enrolling in the clinical, you must have a complete physical examination, including TB and Hepatitis carrier tests. It is highly recommended that you talk to your family physician about receiving the hepatitis vaccine before you start the professional course sequence of Dental Hygiene.
  6. You must maintain a current Professional Rescuer CPR certification throughout your enrollment in the Dental Hygiene courses, plus you must maintain your certification to be a licensed Dental Hygienist in the State of Michigan.
  7. In addition to tuition, fees, and textbook costs, you must purchase laboratory coats, clinic shoes, uniform pants, safety glasses, and the Dental Hygiene Instrument Kit (additional costs approximately \$1,500).
  8. Student re-entry procedures are printed in the handbook given to all clinical students.
  9. Dental Hygiene students should be taking DH 101 for Dental Anatomy. DA 113 Oral Anatomy & Physiology may be substituted for DH 101 if a "B" (3.0) or higher was achieved in the course.
  10. According to State rules and regulations, licensure may be delayed or denied depending on the history of convictions involving felonies, misdemeanors, and/or involving controlled substances (including traffic violations). Questions dealing with this issue should be directed to the Michigan State Office of Health Services at (517) 335-0918.
  11. Successful completion of LW 206A, LWA 206B, and LWA 206C meets the Lifelong Wellness graduation requirement.
  12. You may substitute DA 123L for DH 123L. A minimum "C" grade is required.
  13. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
  14. Delta College reserves the right to modify graduation requirements.
  15. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.
- Also see "Dual Degrees."**



# Diagnostic Medical Sonography

Career Pathway: Health Science



## Associate in Applied Science Degree/ Advanced Certificate

Ultrasound is a diagnostic imaging modality that uses high frequency sound waves to obtain anatomical images of the abdominal, pelvic, fetus, and vasculature systems. A sonographer is a skilled health care professional who performs diagnostic ultrasound examinations under the direction of a physician. Sonographers use their knowledge of anatomy and physiology, pathology, and ultrasound physics in order to obtain quality images for interpretation. A sonographer must be proficient in problem solving, and possess the ability to extrapolate pertinent patient history along with supporting clinical data to facilitate optimum diagnostic results. Upon successfully completing this program, students are eligible to take the national certification examination administered by the American Registry of Diagnostic Medical Sonographers.

	Sem Hrs
<b>General Education Courses</b>	
>+ BIO 140 Essentials Of Human Anatomy & Physiology .....	5
<b>OR</b>	
>+ BIO 152 Human Anatomy & Physiology I .....	(4)
>+ BIO 153 Human Anatomy & Physiology II .....	(4)
>+ COM 114 Interpersonal Communication .....	3
>+ ENG --- Any Approved College Composition I Course .....	3/5
>+ ENG 113 Technical Communication .....	3
>+ HSC 105 Medical Terminology .....	2
>+ PHY 101 Applied Physics .....	4
<b>OR</b>	
>+ PHY 111 General Physics I .....	(4)
*10 POL --- Any Approved American Government Requirement .....	3/4
*10 PSY 211 General Psychology .....	4
*10 PHL 215 Health Care Ethics .....	3
*10 SOC 211 Principles of Sociology .....	3
<b>Subtotal</b>	<b>33/39</b>

Prior to attempting to register to begin the clinical sequence, you must complete the admission process for the DMS program. See notations.  
Basic Program Requirements

### First Semester

>+10 DMS 100 Patient Care and Management .....	2
>+10 DMS 105 Ultrasound Physics and Instrumentation I .....	2
>+10 DMS 107 Introduction to Ultrasound Scanning .....	1
>+10 DMS 107L Introduction to Ultrasound Scanning Lab .....	1
<b>Subtotal</b>	<b>6</b>

### Second Semester

>+ DMS 101 Introduction to Sonography .....	2
>+ DMS 103 Introduction to Abdominal Sonography .....	3
>+ DMS 104 Introduction to OB/GYN Sonography .....	2
>+ DMS 106 Ultrasound Scanning .....	4
* LW 206A Occupational Wellness 1 .....	1
<b>Subtotal</b>	<b>12</b>

### Third Semester

>+ DMS 112 Small Parts Sonography .....	1
>+ DMS 113 Advanced Abdominal Sonography .....	1
>+ DMS 114 Advanced OB/GYN Sonography .....	2
>+ DMS 115 Ultrasound Physics and Instrumentation II .....	2
>+ DMS 116 Clinical Seminar I .....	.5
>+ DMS 117 Clinical Education I .....	5
* LW 206B Occupational Wellness 2 .....	.5
<b>Subtotal</b>	<b>12</b>

### Fourth Semester

>+8 DMS 201 Introduction to Neurologic and Vascular Sonography .....	3
>+8 DMS 202 Ultrasound Seminar I .....	4
>+8 DMS 206 Clinical Seminar II .....	.5
>+8 DMS 207 Clinical Education II .....	5
* LW 206C Occupational Wellness 3 .....	.5
<b>Subtotal</b>	<b>13</b>

### Fifth Semester

>+8 DMS 212 Ultrasound Seminar II .....	4
>+8 DMS 217 Clinical Education III .....	5
<b>Subtotal</b>	<b>9</b>

Total Credits Required For Associate Degree 85/91

Total Credits Required For Certificate 70/75

### Notations:

**> A Certificate will be awarded when courses preceded by a greater than (">") sign are successfully completed.**

**\* A "C" minimum grade is required in each asterisked course.**

**+ A "B" minimum grade is required in each course preceded by a plus sign ("+").**

1. A maximum of 14 students will be accepted each fall semester for the DMS program. The procedure for application to the DMS program can be obtained from Counseling, the DMS web site (<http://www.delta.edu/health/dmsII/index.html>), or the DMS Program Coordinator. Students will be eligible to register for clinical courses only after successful validation. Validation will include: 1) meeting all admission criteria with the required nine (9) points; 2) qualifying under Option A (graduate of a qualified allied health program), OR obtaining a "B" (3.0) minimum grade in each course under Option B (see notation 2); and 3) successfully passing a required interview. (Interview resources are available in the Delta College Career Services office.) In addition, all students must demonstrate English competency of READING LEVEL 5 and WRITING LEVEL 3, and Math competency of MATH LEVEL 4 prior to application.
2. Prerequisite qualifications are: Graduate of an accredited allied health program or completion of the following courses with a "B" (3.0) or better: BIO 140 or BIO 152 and BIO 153, HSC 105, any approved College Composition I course, ENG 113, COM 114 or SPH 114, PHY 101 or PHY 111. If you are an allied health program graduate but the program did not include college level physics, you will still be required to take PHY 101 or PHY 111 with a "B" (3.0) or better. Medical Radiography Physics will meet this requirement.
3. Program qualifications include: (a) High school graduate or GED equivalent; (b) Be admitted to Delta College; (c) Provide transcripts from high school and other colleges attended.
4. Other program requirements: (a) Current CPR for the Professional Rescuer certification is required for admission to the clinical sequence. CPR currency must be maintained throughout the program; (b) Submit a completed Student Physical Examination Form, which requires a negative TB test; (c) Submit evidence of Hepatitis B immunization or signed waiver form provided during orientation.
5. Basic computer literacy skills or CST 103 or CST 106.
6. DMS program courses must be taken together in the sequence shown. Clinical education courses are conducted primarily during daytime hours; however, off-shifts (second and third shifts) may be assigned to meet course objectives.
7. You must achieve a "B" (3.0) minimum grade in each DMS course to be eligible to continue in and graduate from the DMS program. You must comply with all DMS program progression and retention policies (copies available from the Health Programs counselor or DMS program coordinator.)
8. Licensure may be delayed or denied depending on the history of criminal convictions. Questions regarding this issue may be directed to the ARDMS (American Registry of Diagnostic Medical Sonographers) at [www.ardms.org](http://www.ardms.org) or (301) 738-8401.
9. In addition to tuition, fees, and textbook costs, you must purchase uniforms, name tags, and clinical shoes; provide your transportation to clinical settings; pay for meals, parking fees, and any medical

treatment which may become necessary. Student clinical rotations will consist of two separate six-month placements. Many clinical sites are located outside the tri-city area and may be out of state. Students must be prepared to commute or relocate.

10. You can complete POL ---, PSY 211W, PHL 215W, and SOC 211 in the first semester of basic program requirements in order to maintain your full-time student status.
11. All students will be required to undergo a background check and may be required to have a drug screen, dependent upon clinical site assignments.
12. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
13. Delta College reserves the right to modify graduation requirements.
14. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

Also see "Dual Degrees



## Digital Film Production

Career Pathway: Arts and Communications



### Advanced Certificate

When you complete this certificate, you will have been introduced to many aspects of film production: film aesthetics, screenwriting, filming, and editing. The certificate can also prepare you for further film studies and might help you find work in the film industry. In addition, courses in the certificate also provide a foundation for work in video advertising, videography, and the production of training films.

			Sem Hrs
*	EM	280 Digital Film Capstone .....	3
*	EMB	151 Media Production I.....	4
*	EMB	154 Peripheral Multimedia Applications.....	2
*	EMB	155 Media Production II.....	4
*1	ENG	--- Any Approved College Composition I Course .....	AND 3/5
*1	ENG	--- Any Approved College Composition II Course .....	3/5
		OR	
*1	OAT	151 Business Communication I.....	AND (3)
*1	OAT	152 Business Communication II.....	(3)
*	ENG	254 Creative Writing: Fiction .....	3
*	ENG	258 Introduction to Screenwriting.....	2
*	IHU	226 Introduction to Film.....	OR 3
*	LIT	226 Introduction to Film.....	(3)
		Subtotal	27/31

One of the following courses is also required:

*	EMB	175 Genres in Film History.....	3
*	ENG	259 Advanced Screenwriting.....	2
*	LIT	227 The American Motion Picture .....	3
*	PHL	225 Philosophy and Film .....	3
		Subtotal	3

Total Required For Advanced Certificate 29/34

### Notations:

\* A "C" minimum grade is required in each course preceded by a "\*" symbol.

1. For students planning on transferring to a 4-year institution ENG 111 and ENG 112 are recommended.
2. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
3. Delta College reserves the right to modify graduation requirements.

## Dual Degrees

*Career Pathway: Business, Management,  
Marketing and Technology*



### Options:

**Automotive Service Technology/  
General Management  
Dental Assisting/General Management  
Dental Hygiene/General Management  
Diagnostic Medical Sonography/General Management  
Health Fitness Education And Promotion/General  
Management  
Nursing/General Management  
Physical Therapist Assistant/General Management  
Radiography/General Management  
Respiratory Care/General Management  
Surgical Technology/General Management**

### Associate in Applied Science Degree and Associate in Business Studies Degree

Dual associate degrees are available in several Health curricula and the Automotive Service Technology curricula with the General Management Program. Generally, the requirements are completed simultaneously; however, the business courses normally will be completed prior to beginning your clinical sequence. Your diploma will list both the Associate in Applied Science Degree and the Associate in Business Studies Degree.

You will need to earn the required number of credits for your Associate in Applied Science Degree plus 24 credits from the courses below for the Associate in Business Studies Dual Degree.

If you have earned a degree previously, you may not use courses from that degree to satisfy the requirements of a Dual Degree. It is possible that your previous degree may have included one or more of the required business courses. You do not have to retake such classes, but must replace them from the list of approved business courses under the dual degree to complete the additional 24 credits by instruction at Delta College.

	Sem Hrs
<b>Business Core Requirements for Degree</b>	
2,3 ACC 111 Introductory Accounting .....	4
<b>OR</b>	
2,3 ACC 211 Principles of Accounting I .....	(4)
2,4 CST 133 Computer Concepts & Competencies .....	4
<b>OR</b>	
2,4 CST 134 Micro Computers in Business Using MS Office .....	(3)
2 MGT 153 Introduction to Business .....	3
2 MGT 245 Principles of Management .....	3
2 OAT 151 Business Communication I .....	3
Subtotal .....	16/17
Select from electives below .....	7/8
<b>Total Credits Required For Associate In Business Studies Dual Degree</b>	<b>24</b>

The remaining 7/8 credits are to be selected from the following courses:

ACC 212	Principles of Accounting II .....	4
ACC 214	Microcomputer Accounting Applications .....	4
CST 104	Microsoft Word Foundations .....	1
CST 105	Outlook .....	1
CST 146	Desktop Publishing .....	2
4 CST 151	Spreadsheet Fundamentals .....	2
<b>OR</b>		
4 CST 155	Microsoft EXCEL .....	(3)
CST 204	Microsoft Word: Intermediate .....	2
CST 257	Database MS Access .....	3
ECN 221	Principles of Economics I .....	4
MGT 110	Business Mathematics .....	3
MGT 145	Principles of Sales .....	3
MGT 243	Principles of Marketing .....	3
MGT 251	Business Law I .....	3
MGT 255	Conflict Management .....	3
MGT 256	Human Resources Management I .....	3
MGT 257	Human Resources Management II .....	3
MGT 274	Computer Aided Decisions .....	2
OAT 152	Business Communication II .....	3
PHL 203	Business Ethics .....	3
<b>OR</b>		
PHL 210	Information Technology Ethics & Law .....	(2)
Subtotal		24/25

### Notations:

**\*A "C" (2.0) minimum grade is required in each asterisked course.**

1. In addition to completing all the courses for an approved applied science program (see above), you must complete a minimum of 24 credits by instruction at Delta College.
2. If a student has already earned credit in one or more of the required courses, the student will select other courses from the list of electives to total 24 credits.
3. Student re-entry procedures are printed in the handbook given to all clinical students.
4. Credits required for a dual degree vary according to the chosen curricula.
5. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
6. Delta College reserves the right to modify graduation requirements.
7. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

# Electronic Media Broadcasting (EMB)

Career Pathway: Arts and Communications



## Associate in Applied Arts Degree

The Delta College Electronic Media/Broadcasting program provides students with a broad range of traditional classroom and laboratory learning opportunities as well as hands on experience. The EMB curriculum is designed to provide well balanced instruction in the fields of broadcasting and multimedia production. Beginning with an exploration of the history of radio and television, students then study audio and video production, through which students will gain hands on experience in laboratory and real time operating conditions. The EMB program then concentrates on the growing and ever-changing fields of digital media productions and their practical applications. Students will utilize television production studios and computer labs to produce individual and group productions. The EMB program also offers students a chance to acquire professional experience while in school through internships with commercial radio and TV stations as well as practicum credit through WDCQ-TV/WDCP-TV and WUCX-FM, Delta College's Quality Public Television and Radio stations. Successful completion of the Electronic Media/Broadcasting program will provide students with the fundamental information and experience necessary for entry level positions in communication and information industries. The EMB degree will also provide a strong foundation for a student's further pursuit of a related undergraduate degree. Discussion regarding the best order for you to schedule the courses should be made with a Delta Electronic Media Broadcasting counselor. Check course descriptions for prerequisites. You must complete all required courses in this program.

Sem Hrs

### General Education Requirements

COM 112	Fundamentals of Oral Communication.....	3
ENG ---	Any Approved College Composition I Course..... <b>AND</b>	3/5
ENG ---	Any Approved College Composition II Course.....	3/5
ENG 115	Mass Media.....	3
ECN 221	Principles of Economics I.....	4
LW ---	Any 1 Credit LW Course (As of fall 2007).....	1
<b>AND</b>		
LWA ---	Any 1 Credit LWA Course.....	1
<b>OR</b>		
LW ---	Any 2 Credit LW Course (As of fall 2007).....	(2)
PHL 205	Media Ethics & Law.....	3
POL ---	Any Approved American Government Requirement.....	3/4
Subtotal		24/29

### Basic Program Requirements

EMB 140	Electronic Media History.....	3
* EMB 151	Media Production I.....	4
EMB 153	Broadcast Performance.....	3
EMB 154	Peripheral Multimedia Applications.....	2
*\$ EMB 155	Media Production II.....	4
* EMB 211	Writing for Broadcast & New Media.....	3
EMB 227	Broadcast Sales.....	3
* EMB 255	Media Production III.....	4
EMB ---	Any Approved EMB Practicum or Internship.....	1/3
Subtotal		27/29

### Approved EMB Practicums/Internships/Electives

3	EMB 275	DVD Design and Authoring.....	3
	EMB 175	Genres in Film History.....	3
	EMB 233	Radio News and Programming.....	3
	EMB 281	Internship.....	1
	EMB 282	Internship.....	2
	EMB 283	Internship.....	3
	EMB 284	Public Broadcasting Practicum.....	2
	EMB 285	Public Broadcasting Practicum.....	2
	ART 100	Elements of Color Photography.....	3
	ART 271	Digital Imaging I.....	3
	PHL 225	Philosophy and Film.....	3

4/11

Total Credits Required For Associates Degree 62

### Notations:

\* A "C" minimum grade is required in each asterisked course.

### \$ Key Course: Key courses must be completed within 5 years of completing certificate or degree.

1. Based on available facilities and equipment, this program is considered a "limited" enrollment program.
2. If you are planning to transfer, please work closely with the Program Counselor.
3. You must complete the prerequisite for EMB 155 to take EM 275.
4. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
5. Delta College reserves the right to modify graduation requirements.
6. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



# Entrepreneurship

Career Pathway: Business, Management,  
Marketing and Technology



## Certificate of Achievement

This new program is designed specifically for you if you plan to own and manage your own business, or if you currently own a business and want to become more proficient with your skills.

			Sem Hrs
Basic Program Requirements			
*	ENT 101	Accounting for Entrepreneurs.....	3
*	ENT 131	Entrepreneurship/Small Business Management I .....	3
*	ENT 132	Entrepreneurship/Small Business Management II .....	3
*	ENT 201	Financial Management for Entrepreneurs .....	3
*	ENT 221	Law for Entrepreneurs .....	3
*	MGT 243	Principles of Marketing .....	3
Subtotal			18
Total Credits Required For Certificate			18

## Notations:

\* A "C" minimum grade is required in each asterisked course.

1. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
2. Delta College reserves the right to modify graduation requirements.



# Environmental Technology

Career Pathway: Natural Resources and Agriscience



## Associate in Applied Science Degree/ Advanced Certificate

Successful completion of the program will prepare you for employment as a hazardous materials technician, safety technician, solid waste technician, recycling technician, or as a team member in environmental consulting firms. Skills and knowledge that you should possess as a result of completing the program include: understanding of the specific safety and environmental regulations related to work environment; familiarity with computers; basic understanding of chemical terminology; ability to read technical materials and translate what is read into action; ability to write comprehensible reports; ability to keep records; ability to make routine mathematical computations; understanding of how environmental regulations are formulated, and understanding of the interrelated nature of environmental problems.

		Sem Hrs
<b>General Education Courses</b>		
COM 112	Fundamentals of Oral Communication .....	3
	<b>OR</b>	
COM 114	Interpersonal Communication .....	(3)
> ENG --	Any Approved College Composition I Course .....	3/5
> ENG 113	Technical Communication .....	3
GLG 130	Environmental Geology (Recommended) .....	4
	<b>OR</b>	
GLG 111	Physical Geology .....	(4)
LW --	Any 1 Credit LW Course (As of fall 2007) .....	1
	<b>AND</b>	
LWA --	Any 1 Credit LWA Course .....	1
	<b>OR</b>	
LW --	Any 2 Credit LW Course (As of fall 2007) .....	(2)
3,4 MTH --	Any Approved Intermediate Algebra Course .....	4
MTH 208	Elementary Statistics .....	3
POL --	Any Approved American Government Requirement .....	3/4
2 -- --	Electives .....	3
	<b>Subtotal</b>	<b>28/31</b>
<b>Basic Program Requirements</b>		
> BIO 110	Environmental Science .....	4
3> CHM 105	Technical Chemistry I .....	5
3> CHM 106	Technical Chemistry II .....	5
CST 133	Computer Concepts & Competencies .....	4
> ENV 100	Environmental Regulations .....	3
> ENV 130	Pollution Prevention .....	1
1> ENV 151	Hazwoper Training .....	2.7
1> ENV 152	Emergency Response To Industrial Spills .....	1.6
1> ENV 153	Confined Space Training .....	1.3
1> ENV 154	Hazardous Materials Shipping And Handling .....	0.4
CHM 230	Chemical Analysis/Instrumentation .....	4
> PHY 101	Applied Physics .....	4
	<b>Subtotal</b>	<b>36</b>
<b>Options/Suggested Electives/Recommended Electives</b>		
BIO 116	Winter Ecology .....	2
BIO 119	Stream Ecology .....	1
BIO 123	Survey Of Michigan Plant Communities .....	2
BIO 203	General Microbiology .....	4
ENV 310	Environmental Site Assessments .....	3
ENV 320	Environmental Management Systems .....	3
	<b>Total Credits Required For Certificate</b>	<b>34/36</b>
	<b>Total Credits Required For Associate Degree</b>	<b>64/67</b>

## Notations:

**> CERTIFICATE OPTION - A certificate will be awarded when you successfully complete courses preceded by a greater than sign ">"**

1. ENV 151, ENV 152, ENV 153, and ENV 154 are presented as a series of training modules offered through Delta College Corporate Services. All training components are those required and detailed through OSHA Hazardous Training or other State and Federal regulations. Upon presentation of verification of completion of each of these modules to the chairperson of the Science Division, the student will receive the indicated amount of academic credit.
2. Electives: If you are considering transferring to a university, review the Associate in Science degree requirements in the catalog and see a counselor since requirements of various transfer schools differ.
3. If you have high school background in chemistry and math or an acceptable score on the current college assessment instrument that meet this objective you should consider higher level chemistry and math courses. This is particularly important for students who may wish to transfer to a university to pursue a baccalaureate degree. Consult a counselor for appropriate courses and waiver.
4. This requirement can also be met with an acceptable score on the current college assessment instrument. Credits can be replaced from the elective list to meet minimum requirements.
5. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
6. Delta College reserves the right to modify graduation requirements.
7. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



# Fire Science Technology

Career Pathway: Human Services



## Options:

**Emergency Medical Services**  
**Fire & Industrial Loss Prevention Officer**  
**Fire Fighter Technician**  
**Fire Investigation/Prevention**  
**Fire Science Technology**  
**Industrial/Commercial Security & Safety**  
**Leadership & Training**

## Associate in Applied Science Degree/ Advanced Certificate

This Associate degree program in Fire Science Technology is designed to provide vocational and technical skills which will provide you with educational credentials for employment or promotional opportunities. Students graduating may enroll in the 3+1 BBA Fire Administration Degree Program. Students may choose two of the options, which will appear on their degree. Students wishing more could complete a second degree with minimum of 24 additional credits.

**Fire Science Technology:** As a student you will embrace a wide range of knowledge leading to the control or prevention of fire and the handling of hazardous materials. This program is designed for the entering college student, the professional fire fighter and persons employed in a broad range of occupations related to fire science and safety. Technical competency prepares you for managerial and leadership positions in municipal, industrial or business entities.

**Emergency Medical Services:** As an Emergency Medical Technician, you will provide basic emergency prehospital care to patients involved in accidents, injuries, or sudden illness. Places of employment include fire and police departments, rescue operations, ambulance services, hospitals, and industrial sites.

**Fire & Industrial Loss Prevention Officer:** As a loss prevention officer you will provide emergency response and security for sites including: medical, hazardous materials, fire, atmospheric sampling, and other duties. In addition, team members conduct audits on lockout tag-out operations, safe work permits, fire inspections, setting up confined space entries, establishing tie off points for fall protection, etc. You can take additional courses to obtain associate and baccalaureate degrees.

**Fire Fighter Technician:** As a Fire Fighter, you will respond to emergency calls, control and extinguish fires, mitigate hazards, protect life and property, and maintain equipment. You will be responsible for proper use and maintenance of equipment, educating the public, responding to emergencies and developing pre-incident plans to protect the community against loss of life and property.

**Fire Investigation/Prevention:** As a Fire Safety Inspector, you will be involved in education, enforcement, engineering and fire investigation. Your work will involve fire safety education, inspecting and enforcing fire codes, plan review, testing of fire protection systems, maintaining exitways, inspecting flammable liquid storage, determining cause and origin of fires and preserving evidence, and testifying in court cases.

**Industrial/Commercial Security and Safety:** You will perform inspections of industrial and commercial buildings to detect fire and safety hazards and make recommendations for improvements for loss prevention management. Your duties will include examining interiors and exteriors of industrial settings for violation of federal, state and local requirements.

**Leadership & Training:** You will provide the command and educational functions for public or private entities. Responsibilities include all major functions at emergency scenes, training of personnel, safety and overall management of resources.

Sem Hrs

## General Education Courses

ENG	---	Any Approved College Composition I Course .....	3/5
ENG	---	Any Approved College Composition II Course .....	3/5
<b>OR</b>			
ENG	113	Technical Communication .....	(3)
LW	---	Any 1 Credit LW Course (As of fall 2007) .....	1
<b>AND</b>			
1	LWA	Any 1 Credit LWA Course .....	1
<b>OR</b>			
LW	---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
POL	---	Any Approved American Government Requirement .....	3/4
PSY	101	Applied Psychology .....	3
<b>OR</b>			
COM	112	Fundamentals of Oral Communication .....	(3)
<b>OR</b>			
COM	114	Interpersonal Communication .....	(3)
Subtotal			14/19

## Fire Science Core Courses

*	FST	101	Introduction to the Fire Service .....	3
*	FST	219	Fire Protection Hydraulics & Water Supply .....	3
<b>OR</b>				
*	FST	219	Fire Protection Hydraulics & Water Supply .....	<b>AND</b> (3)
	FST	219L	Fire Protection Hydraulics & Water Supply Lab .....	(1)
*	FST	102	Fireground Tactics .....	3
*	FST	103	Building Construction .....	3
*	FST	105	Hazardous Materials/Emergency Responder .....	3
*	FST	107	Fire Protection Systems I .....	3
*	CST	133	Computer Concepts & Competencies .....	4
<b>OR</b>				
*	FST	133	Computer Aided Management Emergency Operations .....	(3)
Subtotal				21/23

## I. Fire Fighter Technician Option (Code 25736)

*	FST	111	Fire Fighter IA .....	6
*	FST	112	Fire Fighter IB .....	6
*	FST	211	Fire Fighter II .....	4
*	FST	301	Incident Command System .....	1
2	---	---	Approved Electives .....	6
---	---	---	General Electives .....	4
Subtotal				27

## II. Fire Investigation/Prevention Option (Code 25734)

*	CJ	210	Introduction to Criminal Investigation .....	3
<b>OR</b>				
*	FST	224	Fire Investigation .....	(3)
*	FST	205	Hazardous Materials/Emergency Operations .....	3
*	FST	206	Confined Space Management & Rescue .....	4
<b>OR</b>				
*	FST	207	Fire Protection Systems II .....	(3)
*	FST	104	Arson Awareness .....	3
*	FST	230	Fire Safety Education .....	3
*	FST	231	Fire Service Law .....	3
2	---	---	Approved Electives .....	6
---	---	---	General Electives .....	5/6
Subtotal				29/31

## III. Fire Science Technology Option (Code 25731)

2	---	---	Approved Electives .....	18
---	---	---	General Electives .....	9
Subtotal				27

<b>IV. Industrial/Commercial Security and Safety Option (Code 25733)</b>			
*	CJ 182	Introduction to Security.....	3
*	FST 205	Hazardous Materials/Emergency Operations.....	3
*	FST 206	Confined Space Management & Rescue .....	4
<b>OR</b>			
*	FST 207	Fire Protection Systems II .....	(3)
*	FST 231	Fire Service Law .....	3
*	MIT 118	Safety Practices and Procedures .....	2
2	---	Approved Electives.....	6
	---	General Electives .....	6/7
Subtotal			26/28
<b>V. Leadership &amp; Training Option (Code 25735)</b>			
*	MGT 245	Principles of Management.....	3
<b>OR</b>			
*	FST 203	Fireground Management .....	(3)
*	FST 280	Company Officer I/II.....	4
<b>OR</b>			
*	FST 206	Confined Space Management & Rescue .....	(4)
*	FST 204	Fire Service Instructional Methodology .....	3
*	FST 231	Fire Service Law .....	3
*	FST 104	Arson Awareness.....	3
<b>OR</b>			
*	FST 230	Fire Safety Education .....	(3)
2	---	Approved Electives.....	6
	---	General Electives .....	5/6
Subtotal			27/28
<b>VI. Emergency Medical Services (Code 25732)</b>			
*	EMS 110	Basic Emergency Medical Technician I .....	4
*	EMS 111	Basic Emergency Medical Technician II .....	4
*	EMS 112	Basic Emergency Medical Technician III .....	2
*	EMS 113	Basic Emergency Technician Field Experience.....	2
*	FST 301	Incident Command System .....	1
2	---	Approved Electives.....	6
	---	General Electives .....	8
Subtotal			27
<b>VII. Fire &amp; Industrial Loss Prevention Officer (Code 35732)</b>			
*	CJ 182	Introduction to Security.....	3
	COM 114	Interpersonal Communication.....	3
*	EMS 110	Basic Emergency Medical Technician I .....	4
*	EMS 111	Basic Emergency Medical Technician II .....	4
*	EMS 112	Basic Emergency Medical Technician III .....	2
*	EMS 113	Basic Emergency Technician Field Experience.....	2
	ENG ---	Any Approved College Composition I Course .....	3/5
*	FST 105	Hazardous Materials/Emergency Responder.....	3
*	FST 111	Fire Fighter IA.....	6
*	FST 112	Fire Fighter IB.....	6
*	MIT 118	Safety Practices and Procedures .....	2
Subtotal			38/40
<b>Approved Electives (See Notation #3)</b>			
*	CJ 187	Current Issues in Security .....	3
*	COM 202	Oral Communication for Managers.....	3
*	FST 114	Firefighter Safety and Survival .....	0.8
*	FST 115	Managing Company Tactical Operations: Preparing (MCTO:P)	0.8
			0.8
*	FST 116	Building Construction Principles .....	0.8
*	FST 117	Managing Company Tactical Operations: Decision Making (MCTO:D)	0.8
			0.8
*	FST 118	Records and Reports.....	0.4
*	FST 120	Fire Service Educational Methodology .....	1
*	FST 213	Managing Company Tactical Operations: Tactics (MCTO:T)...	0.8
*	FST 214	Arson Detection for the First Responder .....	0.8
*	FST 215	Introduction to Fire Inspection Principles and Practices (IFIPP)	2
			2
*	FST 216	Building Construction Non-Combustible/Fire Resistive .....	0.8
*	FST 217	Fire Service Supervision: Personal Effectiveness .....	0.8
*	FST 218	Fire Service Supervision: Team Effectiveness.....	0.8
*	FST 220	Strategy & Tactics for Initial Company Officer .....	1
*	FST 240	Internship in Fire Science .....	2
*	FST 301	Incident Command System .....	1

*	FST 300	Fire Officer III.....	3
<b>OR</b>			
*	FST 302	Leadership I Strategies for Company Success .....	AND (1)
*	FST 303	Leadership II Strategies for Personal Success.....	AND (1)
*	FST 304	Leadership III Strategies for Supervisory Success.....	AND (1)
*	FST 305	Firefighter Health and Safety: Program Implementation & Manage ment.....	(1)
			1
*	FST 306	Shaping the Future .....	1
*	QA 191	Quality Teamwork .....	1
*	FST 307	Incident Safety Officer .....	1
*	FST 308	Health and Safety Officer .....	1
*	FST 332	Advanced Fire Administration .....	3
*	FST 334	Fire Prevention Organization & Management .....	4
*	FST 338	Contemporary Issues In The Fire Service .....	3
	MGT 153	Introduction to Business .....	3
*	MGT 243	Principles of Marketing .....	3
*	MGT 265	International Business .....	3
*	PHL 203	Business Ethics .....	3

Total Credits Required For Associate Degree 62

Total Credits Required For Advanced Certificate 38/40

#### Notations:

#### \* A "C" (2.0) minimum grade is required in each asterisked course.

1. Recommended Life Long Wellness (LWA) classes are LWA 111, 172, 173 or 174.
2. Approved Fire Science Technology (FST) electives can be any combination of required (non-elective) courses in the other options and those listed as approved electives.
3. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
4. Delta College reserves the right to modify graduation requirements.
5. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



## Group Fitness Instructor

Career Pathway: Human Services



### Advanced Certificate

Today's fitness industry is rapidly growing. Being a group exercise instructor is no longer about teaching aerobics. The modern group fitness instructor may be expected to teach a variety of specialties such as step aerobics, indoor cycling, yoga, Pilates, cardio kickboxing, weight training and conditioning, stability ball, and senior or child fitness classes. This program will offer the education and certification to teach safe and effective exercise to a wide variety of populations. An understanding of human anatomy and physiology will also be included. Upon completion of this program, you will be eligible to sit for the American Council on Exercise (ACE) certification exam.

#### Sem Hrs

#### Basic Program Requirements

* BIO 101	Introduction to Anatomy and Physiology .....	4
OR		
* BIO 152	Human Anatomy & Physiology I .....	(4)
OR		
* BIO 140	Essentials Of Human Anatomy & Physiology .....	(5)
* COM 112	Any Approved Fundamentals of Oral Communication .....	3
* HSC 140	Basic Medical Emergencies .....	2
OR		
* LWT 165	Community First Aid .....	(1)
AND		
* LWT 170	Basic Life Support for the Health Care Provider .....	(1)
* LWA 151	Kick Boxing .....	2
* LWA 152	Astanga Yoga .....	1.5
* LWA 153	Dance Aerobics .....	1
OR		
* LWA 157	Step Aerobics .....	(1)
* LWA 156	Stability Ball Training .....	1
* LWA 158	Pilates .....	1
* LW 220	Lifelong Wellness .....	1
* LWT 210	Nutrition: The Science of Optimal Living .....	3
* LWT 230	Theory of Strength and Conditioning .....	3
* LWT 242	Group Fitness Instructor .....	4

Total Credits Required For Certificate 26.5/27.5

#### Notations:

#### \* A "C" minimum grade is required in each asterisked course.

1. Current CPR certification is required for admission to the program and must be maintained throughout the program.
2. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
3. Delta College reserves the right to modify graduation requirements.

## Health Fitness Specialist

Career Pathway: Human Services



### Associate in Applied Science Degree

This degree can stand alone or can lead to a bachelor's degree in Health Fitness, Exercise Physiology, or related field. The program prepares students to sit for two of the most nationally recognized fitness certification exams: The National Strength and Conditioning Association - Certified Personal Trainer Exam, and the American College of Sports Medicine - Certified Personal Trainer or Health Fitness Specialist Exam. This program will give the health fitness student the fundamental knowledge of exercise physiology; human anatomy and physiology; biomechanics; prevention and treatment of exercise-related injuries; CPR, First Aid, and AED readiness skills; health appraisals and assessments; application of fitness principles and strength training; applicable knowledge of nutrition, weight management, stress management, and self-employment; skills in health fitness assessment, as well as designing and leading endurance and strength programs for diverse populations. In addition, upon completion of this associate degree, the health fitness specialist will also have attained the Delta College Personal Trainer Certificate.

#### Sem Hrs

#### General Education Courses

* BIO 111	Principles of Biology .....	4
* CHM 101	General Chemistry I .....	5
* COM 112	Fundamentals of Oral Communication .....	3
* ENG ---	Any Approved College Composition I Course .....	3/5
* ENG ---	Any Approved College Composition II Course .....	3/5
* POL ---	Any Approved American Government Requirement .....	3/4
* PSY 211	General Psychology .....	4
*4 ---	Any Social Science Elective .....	0/1
*4 ---	Any Humanities Elective (except for COM) .....	5

Subtotal 30/36

#### Basic Program Requirements

* BIO 152	Human Anatomy & Physiology I .....	4
* BIO 153	Human Anatomy & Physiology II .....	4
* LW 220	Lifelong Wellness .....	1
* LWT 165	Community First Aid .....	1

#### AND

* LWT 170	BLS for the Health Care Provider .....	1
-----------	--	---

#### OR

* HSC 140	Basic Medical Emergencies .....	(2)
* LWT 210	Nutrition: The Science of Optimal Living .....	3
* LWT 230	Theory of Strength and Conditioning .....	3
* LWT 240	Health Fitness Instructor/Personal Trainer .....	4
* LWT 242	Group Fitness Instructor .....	4
* LWT 251	Exercise Physiology .....	4
* LWT 255	Health Fitness Management and Promotion .....	3
*2 LWT 260	Health Fitness Experience .....	5
LWA ---	Lifelong Wellness Elective from Category A: .....	1
LWA ---	Lifelong Wellness Elective from Category B: .....	1

Subtotal 39/39.5

#### LWA Electives - Category A (Choose from this list for Basic Program Requirements)

* LWA 101	Fitness for Life .....	1
* LWA 106	Athletic Conditioning .....	1
* LWA 108	Weight Training .....	1
* LWA 111	Circuit Training .....	1

#### LWA Electives - Category B (Choose from this list for Basic Program Requirements)

ments)

* LWA 151	Kick Boxing.....	1
* LWA 152	Astanga Yoga .....	1.5
* LWA 153	Dance Aerobics .....	1
* LWA 154	BOSU Ball Training.....	1
* LWA 156	Stability Ball Training .....	1
* LWA 157	Step Aerobics .....	1
* LWA 158	Pilates.....	1

Total Credits Required For Associate Degree 69/75.5

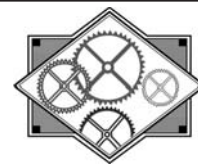
#### Notations:

#### \* A "C" (2.0) minimum grade is required in each asterisked course.

1. In addition to tuition, fees, and textbook costs, you may have to purchase special shoes, shirts, nametags, and provide transportation to all internship sites.
2. Current CPR certification is required for admission to LWT 260. Current CPR certification must be maintained throughout the program.
3. You need to be aware that internship assignments may be outside the Tri-county area.
4. See College catalog for graduation and MACRAO requirements.
5. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
6. Delta College reserves the right to modify graduation requirements.
7. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

## Industrial Technology Education

*Career Pathway: Engineering/Manufacturing  
and Industrial Technology*



### Associate in Applied Science Degree

The industrial technology major for teachers includes coursework to develop technical competence in the technical core of Manufacturing, Construction, Communications, and Power/Energy. It also includes a professional core of coursework directly related to teaching technology to children and youth in public schools of Michigan.

Sem Hrs

#### General Education Courses

* ENG ---	Any Approved College Composition I Course.....	3/5
* ENG ---	Any Approved College Composition II Course.....	3/5
* POL ---	Any Approved American Government Requirement .....	3/4
LW ---	Any 1 Credit LW Course (As of fall 2007) .....	1
<b>AND</b>		
LWA ---	Any 1 Credit LWA Course .....	1
<b>OR</b>		
LW ---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
* PSY 211	General Psychology.....	4
* MTH ---	Any Approved Intermediate Algebra Course.....	4
Subtotal		19/24

#### Basic Program Requirements

* AUT 100	Introduction to Automotive Service .....	3
* RC 104	Construction Lab.....	3
* RC 205	Cabinet Making and Millwork.....	5
* CAD 114	Introduction to CAD .....	2
<b>OR</b>		
* ARC 114	Architectural AutoCAD 2D Basics .....	(2)
* ARC 105	Architectural Drafting I .....	4
<b>OR</b>		
* DRF 104	Basic Mechanical Design.....	(4)
<b>OR</b>		
* DRF 105	Beginning Mechanical Drafting .....	(3)
* MS 114	Industrial Technology Machine Tools .....	3
* MIT 111	Manufacturing Processes .....	3
* EET 235	Electrical Circuits .....	3
* ARC 101	Materials and Methods of Construction .....	3
* WELD 103	Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting ..	3
<b>OR</b>		
* WELD104	Introduction to Shielded Metal Arc Welding .....	(3)
* ED 200B	Exploratory Teaching (Secondary).....	3
* ITE 330	Careers and Technology for Children .....	3
* ITE 350	Teaching Methods and Strategies in Industrial/Technical Education.....	3
* ITE 350	Curriculum Development and Facility Planning in Industrial/Technical Education.....	3
Subtotal		43/44
Total Credits Required For Associate Degree .....		62/68

#### Notations:

#### \* A "C" minimum grade is required in each asterisked course.

1. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
2. Delta College reserves the right to modify graduation requirements.
3. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

# Interior Design

Career Pathway: Arts and Communications



## Associate in Business Studies Degree/ Advanced Certificate

As an interior designer, you will help make our living, working and playing areas more attractive and useful. You may help clients select furniture, draperies, other fabrics, floor coverings, and accessories, as well as estimate what services or furnishings will cost. The main purpose of designers in retail stores is to provide your customers with interior design services. When you begin as an interior designer, you will usually serve a training period, either with design firms, in department stores, or in furniture stores.

	Sem	Hrs
<b>Interior Design Advanced Certificate</b>		
>* ARC 105 Architectural Drafting I .....	4	
>* ID 100 Introduction to Interior Design .....	3	
>* ID 170 Design Elements .....	4	
>* ID 200 Spatial Analysis and Presentation .....	3	
>* ID 210 Furniture .....	3	
>* ID 230 Applied Interior Design .....	3	
> ID 240 Contract/Commercial Design I.....	2	
> ID 241 Contract/Commercial Design II.....	2	
> ID 245 Design Trends .....	2	
>* MGT 152 Textiles.....	3	
Total Credits Required For Interior Design Advanced Certificate	29	
<b>General Education Requirements for Associate in Business Studies (ABS) Degree, Interior Design:</b>		
LW --- Any 1 Credit LW Course (As of fall 2007) .....	1	
<b>AND</b>		
LWA --- Any 1 Credit LWA Course .....	1	
<b>OR</b>		
LW --- Any 2 Credit LW Course (As of fall 2007) .....	(2)	
POL --- Any Approved American Government Requirement.....	3/4	
PSY 101 Applied Psychology .....	3	
<b>OR</b>		
PSY 211 General Psychology .....	(4)	
Subtotal	8/10	

## Additional Program Requirements

ACE 105	Year I Experience I - Business & Human Experience.....	3
ARC 101	Materials and Methods of Construction .....	3
ART 271	Digital Imaging I.....	3
MGT 110	Business Mathematics.....	3
MGT 145	Principles of Sales .....	3
MGT 153	Introduction to Business .....	3
MGT 247	Principles of Retailing.....	3
* OAT 151	Business Communication I .....	3
* OAT 152	Business Communication II .....	3
<b>OR</b>		
* ENG 111	Any College Composition I .....	AND (3/5)
* ENG 112	Any College Composition II .....	OR (3/5)
* ENG 113	Technical Communication.....	(3)
RC 203	Residential CAD .....	3
Subtotal		30/34
Total Credits Required For Associate Degree		67/73

## Notations:

\* A "C" minimum grade is required in each asterisked course.

> A Certificate will be awarded when courses preceded by a greater than (">") sign are successfully completed.

1. This program is not intended to transfer to a four-year college or university. It is designed for students who want immediate employment after graduation from Delta.
2. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
3. Delta College reserves the right to modify graduation requirements.
4. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



## International Studies

*Career Pathway: Business, Management,  
Marketing and Technology*



### Options:

**With Foreign Language Skills**  
**Without Foreign Language Skills**

### Advanced Certificate

While pursuing your individual program of studies as a Delta College student, you can earn an "add-on" Certificate in International Studies by successfully completing applicable courses from designated sets (A, B, C) of present Delta courses (or their equivalents). This program is designed to: 1) provide students a wider and deeper range of international awareness and knowledge; 2) promote an interest in other cultures and places; 3) promote an interest in foreign languages; 4) lay the groundwork for future international learning options for you as a Delta graduate, and 5) enhance employment opportunities. The Certificate in International Studies is an "add-on" to the credential for your present program of studies. Courses/credits you already have may be applicable toward the certificate requirements.

#### Sem Hrs

#### Basic Certificate Program Requirements

* GEO 113	World Cultural Geography .....	4
* HIS 112	A Survey of Later Western Civilization .....	4
---	Choose From Set B Courses .....	6
Subtotal		14

#### OPTION 1 - Without Foreign Language Skills

---	3 Courses - any combination from Sets A,B,C .....	10
Option 1 Total		24

#### OPTION 2 - With Foreign Language Skills

---	Foreign Language, 8 cr. (see Set A) .....	8
---	1 course - from Set B or C .....	2/3
Option 2 Total		24/25

See below for sets A, B, and C of designated courses:

#### SET A: Foreign Languages (8 cr. Required for Option 2). A two semester sequence is highly recommended.

---	French (FR) .....	4
---	German (GE) .....	4
---	Russian (RUS) .....	4
---	Spanish (SPA) .....	2/4

#### SET B: Broad scope Global/International courses (some not offered every semester)

ECN 268	International Studies in Economics .....	4
GEO 111	Physical Geography .....	4
GEO 255	Third World Development .....	4
OR		
SOC 265	Third World Development .....	(4)
HIS 111	A Survey of Early Western Civilization .....	4
MGT 265	International Business .....	3
POL 221	Comparative Government .....	3
POL 225	World Politics .....	3
1 SOC 231	Cultural Anthropology .....	3

#### Set C: Specialized Global/International courses and/or NOT regularly offered courses

ARC 101	Materials and Methods of Construction .....	3
OR		
RC 102	Building Materials .....	(3)
BIO 230	Physical Anthropology And Archeology .....	4
OR		
SOC 230	Physical Anthropology and Archeology .....	(4)
BIO 268	International Studies In Biology .....	4
ECN 268	International Studies in Economics .....	1-4

GEO 105	Human Geography .....	4
GEO 222	Geography Of Asia .....	3
GEO 223	Geography Of Europe .....	3
GEO 226	Geography Of United States And Canada .....	3
GEO 260	Geography Of The Pacific Islands .....	3
GEO 262	The Geography Of The Canadian Shield .....	1
GEO 264	The Geography Of The Western United States And Canada .....	4
GEO 268	International Studies In Geography .....	4
GLG 268	International Studies In Geology .....	4
HIS 214	Early African-American History Pre-European Africa to 1877 .....	3
HIS 217	Hispanics in the U.S. ....	3
HIS 268	International Studies in History .....	3
HIS 275	The Vietnam War .....	3
IHU 161	Projects in Cross-Cultural Learning .....	1

#### OR

SOC 161	Projects in Cross-Cultural Learning .....	(1)
IHU 162	Projects in Cross-Cultural Learning .....	2

#### OR

SOC 162	Projects in Cross-Cultural Learning .....	(2)
LIT 241	Introduction to Mythology .....	3
LIT 242	Introduction to British Literature .....	3
LIT 245	Biblical Literature: Old Testament .....	3
LIT 246	Biblical Literature: New Testament .....	3
LIT 268	International Studies in Literature .....	4
MGT 268	International Studies in Business .....	1-4
POL 222	Politics of the Middle East .....	3
POL 229	Political Terrorism .....	3
POL 268	International Studies in Political Science .....	4
SOC 265	Third World Development .....	4

#### OR

GEO 255	Third World Development .....	(4)
SOC 268	International Studies in Sociology .....	1-4
SPA 101	Hispanic Civilizations .....	2
SPA 275	Introduction of Hispanic Fiction .....	3

Total Credits Required For Certificate 24

### Notations:

#### \* A "C" minimum grade is required in each asterisked course.

1. SOC 231 - Cultural Anthropology - is a highly recommended "Basic Program" elective.
2. The semester hours for the Certificate in International Studies are calculated by adding the TOTAL hours earned from successful completion of the courses listed as Basic Certificate Program Requirements, and courses from Sets A,B, or C (or their equivalents) as appropriate for any individual student.
3. Questions regarding this program may be directed to the Director of International/Intercultural Programs or the Counseling Office.
4. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
5. Delta College reserves the right to modify graduation requirements.

## Lean Resource Management

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



### Certificate of Achievement

The ability of a company to respond to today's market forces involves the identification and management of the value stream. The focus of this certificate is to provide you with the knowledge and skills to examine how a company can provide value to its customers while staying agile and competitive. It looks at the tools and techniques of value creation and waste reduction within both manufacturing and service organizations while optimizing the company's resources.

#### Basic Program Requirements

	Sem	Hrs
* MIT 118 Safety Practices and Procedures .....	2	
* MIT 210 Lean Thinking Strategies .....	3	
* MTH --- Any Approved Intermediate Algebra Course .....	4	
* MTH 208 Elementary Statistics .....	3	
* QA 125 Quality System Design .....	3	
* QA 244 Statistical Process Control .....	3	
Subtotal .....	18	
Total Credits Required For Certificate .....	18	

#### Notations:

\* A "C" minimum grade is required in each asterisked course.

1. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
2. Delta College reserves the right to modify graduation requirements.

## Legal Support Professional

Career Pathway: Human Services



#### Options:

Law Office Foundation  
Law Office Specialist

#### Associate in Business Studies Degree/ Advanced Certificates

Not all legal work requires a law degree. As a legal support professional, you will work directly under the supervision of a lawyer. While the lawyer assumes responsibility for the legal support professional's work, you will often be allowed to perform all the functions of a lawyer other than accepting clients, setting fees, giving legal advice, or presenting a case in court. You will generally do background work for the lawyer and help a lawyer prepare litigation for trial by investigating the facts of the case to make sure that all relevant information is uncovered. Secretarial services are normally required as well.

You may conduct research to identify the appropriate laws, judicial decisions, legal articles, and other material that will be used to determine whether or not the client has a good case. After analyzing all the information, you may prepare a written report that is used by the attorney to decide how the case should be handled. If the attorney decides to file a lawsuit on behalf of the client, you may prepare legal arguments, draft pleadings to be filed with the court, obtain affidavits, and assist the attorney during the trial. You may also keep files of all documents and correspondence important to the case.

**LAW OFFICE FOUNDATION CERTIFICATE:** This program is designed to provide a basic foundation of the work required for a Legal Support Professional.

**LAW OFFICE SPECIALIST CERTIFICATE:** This program is designed to provide advanced office skills while specializing in a legal office.

#### Sem Hrs

The following certificates have been ladderred (sequenced) to lead to the completion of the associate degree.

#### Law Office Foundation Core Courses

>*	LSP 110	Legal Ethics and Responsibilities of the Legal Assistant .....	3
>*	LSP 115	Principles of Substantive Law .....	3
>*	LSP 230	Civil Litigation .....	3
>	LSP 260	Legal Support Internship I .....	1
		<b>OR</b>	
	LSP 261	Legal Support Internship II .....	(2)
		<b>OR</b>	
	LSP 262	Legal Support Internship III .....	(3)
>*	LSP 280	Legal Research and Writing .....	3
>*	MGT 251	Business Law I .....	3
>*	OAT 151	Business Communication I .....	3
>*	OAT 171	Document Processing: Beginning .....	3
>*	---	Approved LSP Electives .....	8/10
		Total Credits For Law Office Foundation Certificate .....	Subtotal 32

#### Law Office Specialist Courses

>>		Law Office Foundation Basic Certificate .....	32
>>	ACC 211	Principles of Accounting I .....	4
>>	CST 106	Internet Foundations .....	1
>>	CST 110	Web Page Development Using HTML .....	1
>>	CST 151	Spreadsheet Fundamentals .....	2
		<b>OR</b>	
	CST 155	Microsoft EXCEL .....	(3)
>>	MGT 252	Business Law II .....	3
>>*	OAT 152	Business Communication II .....	3
		<b>OR</b>	
*	ENG ---	Any Approved College Composition I Course .....	<b>AND</b> (3/5)
*	ENG ---	Any Approved College Composition II Course .....	(3/5)
>>	OAT 172	Document Processing: Intermediate .....	3
		Total Credits For Law Office Specialist Certificate .....	49/57

## General Education Courses

COM 112	Fundamentals of Oral Communication .....	3
<b>OR</b>		
COM 114	Interpersonal Communication .....	(3)
>*	Approved LSP electives .....	2/3
LW ---	Any 1 Credit LW Course (As of fall 2007) .....	1
<b>AND</b>		
LWA ---	Any 1 Credit LWA Course .....	1
<b>OR</b>		
LW ---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
POL ---	Any Approved American Government Requirement .....	3/4
PSY 101	Applied Psychology .....	3
<b>OR</b>		
PSY 211	Any General Psychology .....	(4)
Total Credits Required For Associate Degree		62/73

## Approved Law Electives

* LSP 150	Real Estate Law .....	2
* LSP 210	Estate and Trust Administration .....	2
* LSP 220	Environmental Law .....	2
* LSP 235	Criminal Law and Procedure .....	3
* LSP 240	Domestic Relations .....	2
* LSP 245	Personal Injury .....	3
* LSP 250	Corporate Law .....	2
* LSP 253	Bankruptcy Law .....	3
* MGT 255	Conflict Management .....	3

## Notations:

\* A "C" minimum grade is required in each asterisked course.

> A Certificate will be awarded when courses preceded by a greater than (">") sign are successfully completed.

>> A Law Office Specialist Certificate will be awarded when courses preceded by a (>>) are completed.

1. Proficiency in keyboarding is required for successful completion of this program. If you are not proficient, take OAT 170 in your first semester.
2. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
3. Delta College reserves the right to modify graduation requirements.
4. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

## Liberal Arts

Career Pathway: Liberal Arts or General Education



## Advanced Certificate

The Liberal Arts Certificate program is intended for students who are planning on completing an Associate in Arts or Science Degree at Delta College. It is also intended for those planning on transferring to a four-year college or university after completing one year of course work at Delta. Completion of this certificate program will satisfy the MACRAO requirements (a transfer agreement in the State of Michigan that assists students with the transferability of general education requirements-see Transfer Programs and Procedures, MACRO Articulation Agreement, in this section. Required courses in the Liberal Arts Certificate are flexible and may be customized to meet the needs of the student based upon the transfer institution requirements. Most transfer institutions will accept a minimum of 60 credit hours from Delta; therefore students are encouraged to take additional courses beyond the Liberal Arts Certificate requirements. Students seeking the Liberal Arts Certificate must work closely with the transfer school of choice as well as a Delta College Advisor/Counselor to help ensure the appropriate courses are taken at Delta.

## Required Courses

	Sem Hrs
* ENG --- Any Approved College Composition I Course .....	3
* ENG --- Any Approved College Composition II Course .....	3
* --- --- Humanities Group Requirement (see below) .....	8
* --- --- Social Science Group Requirement (see below) .....	8
* --- --- Natural Science Group Requirement (see below) .....	8
Subtotal	30

Humanities Requirement (in at least two different subject areas) – must select classes from ARC 251 only; ART(except ART 113, 219, 283, 289); ASL; EMB 140 & 175 only; COM 112, 114, 202, 215, 216, 222, 244, 245 only; ENG 253, 254, 256 only; FR; GE; HIS 111 and 112 only; IHU; LIT; MUS (except MUS 138); PHL; RUS; SPA; SSI 110, 232, 234 only.

Social Science Requirement (in at least two different subject areas) – must select classes from BIO 230 only; ECN; HIS; GEO (except GEO 103, 111, 261, 267); POL; PSY; SOC (except SOC 157, 158, 159, 162); SSI.

Science and Math Requirement (in at least two subject areas; must include at least one lab science of 15 contact hours) – must select classes from AST; BIO; CHM; CST 180, 181, 183, 280, 281, 282 only; ENV 310, 320 only; GEO 103, 111, 261, 267 only; GLG; MTH 115 and above (except MTH 117); PHY; PSC; SOC 230 only; SCI 250 only.

Total Credits Required For Certificate Of Achievement 30

## Notations:

\* A "C" minimum grade is required in each asterisked course.

1. Courses below 100 cannot be included in any of the group requirements.
2. Courses listed in more than one Group may not be counted in both groups. For example: HIS 111 and 112 may be included in the Humanities Group or Social Science Group but may not be counted in both.
3. This program is intended for students wishing to complete course work at Delta before transferring to another college/university. Since transfer requirements vary by institution, students are strongly encouraged to meet with representatives from the transfer school. In addition, students should work closely with a Delta Advisor/Counselor in the Academic Advising Center.
4. Earn a minimum of two thirds (2/3) or 20 credits at Delta College.
5. You can not apply more than twelve (12) credits of "P" grades.
6. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
7. Delta College reserves the right to modify graduation requirements.

## Lineworker/Electrical Utility

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



### Options:

#### Lineworker/Electrical Utility Advanced Certificate

#### Associate in Applied Science Degree/ Advanced Certificate

The degree program is designed to prepare you for jobs in the Lineworker/Electrical Utility field. Completion of the certificate is designed to prepare lineworkers to install and repair residential electrical, telephone, and transmission systems. Completion of this program may preempt apprenticeship hours in the Lineworker/Electrical Utility field. When lineworkers become employed, the company may require further training. This training may vary with individual company requirements.

Sem Hrs

#### LINEWORKER I CERTIFICATE PROGRAM

##### Validation Requirements

*>	COM	114	Interpersonal Communication.....	3
*>	LWT	165	Community First Aid .....	1
*>	OAT	105	Time Management.....	1
*>	SKDR	101	Sketching and Blueprint Reading .....	4
*>2,3	SKEL	105	Electrical Utility/Lineworker Orientation .....	2
*>	SKEL	111	Conventional Controls .....	3
*>	SKEL	131	AC/DC Machinery .....	3
*>	SKMA	111	Applied Integrated Electrical Math I.....	6
*>	SKMA	112	Applied Integrated Electrical Mathematics II .....	3
*>	SKMA	113	Applied Integrated Electrical Math III .....	3
*>	SKMT	161	Industrial Rigging and Safety.....	2

Subtotal 31

Application to validate for the Lineworker Level I Program may be made after successfully completing with a "C" or better the above listed courses preceded by the plus "+" sign. You must complete the "Validation Application" and be officially validated. Contact the Counseling or Registrar's Office, or website [www.delta.edu](http://www.delta.edu). See Validation Procedures in this catalog for required process.

##### Lineworker Level I Program

*>2,5,6	SKEL	134	Lineworker Climbing Techniques.....	5
*>5,6	SKEL	136	Utility Worker Training .....	5
*>5,6	SKEL	138	Lineworker Level I .....	6
Subtotal				16

#### DEGREE REQUIRED COURSES

##### General Education Courses

1	ENG	---	Any Approved College Composition I Course .....	<b>AND</b>	3/5
	ENG	113	Technical Communication .....	<b>OR</b>	3
	ENG	---	Any Approved College Composition II Course .....		(3/5)
	<b>OR</b>				
	OAT	151	Business Communication I.....	<b>AND</b>	(3)
	OAT	152	Business Communication II.....		(3)
	LW	220	Lifelong Wellness .....	<b>AND</b>	1
	LWA	---	Any 1 Credit LWA Course.....		1
<b>OR</b>					
	LW	---	Any 2 Credit LW Course (As of fall 2007).....		(2)
	POL	---	Any Approved American Government Requirement .....		3/4
#	---	---	Suggested Electives.....		7/13
Subtotal					18/29

##### # Suggested Supportive Electives

Economics Courses (ECN) .....	
General Management Courses (MGT) .....	
Mechanical Technology Courses (MT) .....	
Psychology Courses (PSY) .....	

Total Credits Required For Advanced Certificate 47

Total Credits Required For Associate Degree 65/76

### Notations:

\* A "C" minimum grade is required in each asterisked course.

> An Advanced Certificate will be awarded when courses preceded by a greater than (">") sign are successfully completed.

+ This course must be completed before applying for validation.

1. ENG 113 is preferred but credit may be earned in other approved College Composition II courses.
2. In addition to tuition and textbook costs, you must purchase denim pants, a long sleeve shirt, and OSHA approved workboots prior to taking SKEL 105 and SKEL 134. See program coordinator for details.
3. Student is responsible for climbing equipment, tools and foul weather gear as required. Cost may exceed \$200 and is payable during SKEL 105. See program coordinator for details.
4. In addition to the program requirements, utility companies in general require that applicants have a valid driver's license and the ability to obtain a CDL license, pass a drug screening test, and not be a convicted felon. See [http://www.michigan.gov/documents/cdlmanual\\_16090\\_7.pdf](http://www.michigan.gov/documents/cdlmanual_16090_7.pdf)
5. Student must successfully complete the required validation courses and submit a "Validation Application" to the Registrar's Office.
6. A maximum of 15 validated students will be accepted to each program offering of the Lineworker Level I program.
7. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
8. Delta College reserves the right to modify graduation requirements.
9. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



## Management

*Career Pathway: Business, Management,  
Marketing and Technology*



### Options:

**Cosmetology Management**  
**Entrepreneurship/small Business Management**  
**Entrepreneurship/small Business Management Adv. Certificate**  
**General Management**  
**Marketing Management**  
**Merchandising Management**  
**Merchandising Management Advanced Certificate**  
**Office Services Management**  
**Office Services Management Advanced Certificate**  
**Retail Management**  
**Retail Management Advanced Certificate**

### Associate in Business Studies Degree

Delta College offers the following specialized management degree options:

**COSMETOLOGY MANAGEMENT:** With a current State of Michigan Cosmetology License, you will receive twenty (20) elective credits at Delta College in the Cosmetology Management Program. Upon completion of the Associate Degree Program, you may be able to continue on at Delta in the 3 + 1 Program with Northwood University. You will also have the skills to open your own salon or manage an existing salon. If you are currently employed in the cosmetology industry, this program of study will also enhance job performance and earning ability. This program will help to fill the void in business training for cosmetology professionals who are required to perform in a business environment with a minimal business background from cosmetology school.

**ENTREPRENEURSHIP/SMALL BUSINESS MANAGEMENT:** This program is designed for those planning to work in a small business, or currently managing a small business who want to enhance their skill sets. If you are interested in managing your own business you may want to consider the Entrepreneurship Program in this section.

**GENERAL MANAGEMENT:** This program is designed to provide a basic foundation in the major functional areas of business management and allows you to structure an individual program that will meet your own needs. This degree option may be completed online.

**MARKETING MANAGEMENT:** This program is designed to prepare you for a career in the field of marketing. As a graduate you will have studied the basics of: advertising from the marketing usage point of view; consumer behavior relating to buying; merchandising policies, budgets and planning; sales; retail organizational structure; product promotion and distribution.

**MERCHANDISING MANAGEMENT:** This program studies the basics of buying, selling, promotional coordination, visual merchandising, and fashion design. This program is designed to prepare you for a career in the field of merchandising.

**OFFICE SERVICES MANAGEMENT:** This program is designed to provide office operations management skills such as: developing and managing systems for office procedures; report and data compilation; filing and record keeping; information gathering techniques; personnel administration.

**RETAIL MANAGEMENT:** This program is designed to provide skills related to the distribution of merchandise and services within a retail store through buying procedures, inventory control and pricing; marketing processes and functions; advertising strategies.

Sem Hrs

Delta College offers the following specialized management advanced certificate options:

### Advanced Certificate Options:

Entrepreneurship/Small Business Management .....	25
Merchandising Management .....	30
Office Services Management .....	24
Retail Management .....	26

### General Education Courses (Required for all Associate in Business Studies, Management degrees)

3	ECN 221	Principles of Macroeconomics .....	4
3	LW ---	Any 1 Credit LW Course (As of fall 2007) .....	1
<b>AND</b>			
4	LWA ---	Any 1 Credit LWA Course .....	1
<b>OR</b>			
3	LW ---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
3	POL ---	Any Approved American Government Requirement .....	3/4
Subtotal			9/10

### Business Core Courses (Required for all Associate in Business Studies Management degrees)

3	CST 133	Computer Concepts & Competencies .....	4
3	MGT 110	Business Mathematics .....	3
3	MGT 153	Introduction to Business .....	3
*3	MGT 245	Principles of Management .....	3
*3	OAT 151	Business Communication I .....	3
*	OAT 152	Business Communication II .....	3
<b>OR</b>			
*3	ENG 111	Any College Composition I .....	<b>AND</b> (3/5)
*3	ENG 112	Any College Composition II .....	<b>OR</b> (3/5)
*3	ENG 113	Technical Communication .....	(3)
Subtotal			19/23

### Associate in Business Studies Cosmetology Management

		General Education Courses (see above) .....	9/10
		Business Core Courses (see above) .....	19/23
2	MI State Board of Cosmetology License (Credit awarded based on State standards) .....		20
	ACC 111	Introductory Accounting .....	4
<b>OR</b>			
	ACC 211	Principles of Accounting I .....	(4)
*	ENT 131	Entrepreneurship/Small Business Management I .....	3
*	ENT 132	Entrepreneurship/Small Business Management II .....	3
<b>OR</b>			
	CST 134	Micro Computers in Business Using MS Office .....	(3)
<b>OR</b>			
	PHL 203	Business Ethics .....	(3)
	MGT 145	Principles of Sales .....	3
*	MGT 251	Business Law I .....	3
Total Credits Required For Associate In Business Studies Degree			64/69

### Associate in Business Studies Entrepreneurship/Small Business Management

		General Education Courses (see above) .....	9/10
		Business Core Courses (see above) .....	19/23
>	ACC 111	Introductory Accounting .....	4
<b>OR</b>			
>	ACC 211	Principles of Accounting I .....	(4)
>	CST 134	Micro Computers in Business Using MS Office .....	3
>	ENT 131	Entrepreneurship/Small Business Management I .....	3
>	ENT 132	Entrepreneurship/Small Business Management II .....	3
>	MGT 145	Principles of Sales .....	3
>	MGT 243	Principles of Marketing .....	3
>	MGT 251	Business Law I .....	3
>	MGT 252	Business Law II .....	3
	MGT 255	Conflict Management .....	3
		General Electives .....	6
Total Credits Required For Associate In Business Studies Degree			62/67

### Associate in Business Studies General Management

General Education Courses (see above) .....	9/10
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	Business Core Courses (see above).....	19/23
3	ACC 211 Principles of Accounting I .....	4
3	ACC 212 Principles of Accounting II .....	4
*3	MGT 243 Principles of Marketing .....	3
*3	MGT 251 Business Law I .....	3
*3	MGT 252 Business Law II .....	3
*3	MGT 256 Human Resources Management I .....	3
3	MGT 265 International Business .....	3
3	MGT 274 Computer Aided Decisions .....	2
	Electives .....	9
	(MGT 255 Conflict Management is highly recommended as an elective.)	
	Total Credits Required For Associate In Business Studies Degree	62/67
<b>Associate in Business Studies Marketing Management</b>		
	General Education Courses (see above) .....	9/10
	Business Core Courses (see above).....	19/23
ACC 111	Introductory Accounting .....	4
	<b>OR</b>	
ACC 211	Principles of Accounting I .....	(4)
MGT 143	Principles of Advertising .....	3
MGT 145	Principles of Sales .....	3
* MGT 157	Principles of Merchandising .....	3
* MGT 243	Principles of Marketing .....	3
* MGT 247	Principles of Retailing .....	3
	<b>OR</b>	
MGT 248	Principles of Buying for Resale.....	(3)
	<b>OR</b>	
MGT 265	International Business .....	(3)
* MGT 251	Business Law I .....	3
MGT 254	Applied Merchandising and Promotional Strategies.....	3
MGT 255	Conflict Management.....	3
MGT 274	Computer Aided Decisions .....	2
	Electives .....	4
	Total Credits Required For Associate In Business Studies Degree	62/67
<b>Associate in Business Studies Merchandising Management</b>		
	General Education Courses (see above) .....	9/10
	Business Core Courses (see above).....	19/23
>1	ACE 105 Year I Experience I Business and Human Services .....	3
>	MGT 143 Principles of Advertising .....	3
>	MGT 145 Principles of Sales .....	3
>*	MGT 151 Merchandising Display .....	3
>*	MGT 152 Textiles.....	3
>*	MGT 157 Principles of Merchandising.....	3
>*	MGT 243 Principles of Marketing .....	3
>*	MGT 247 Principles of Retailing.....	3
>	MGT 248 Principles of Buying for Resale.....	3
3	MGT 251 Business Law I .....	3
>	MGT 254 Applied Merchandising and Promotional Strategies.....	3
	General Electives .....	1
	Total Credits Required For Associate In Business Studies Degree	62/67
<b>Associate in Business Studies Office Services Management</b>		
	General Education Courses (see above) .....	9/10
	Business Core Courses (see above).....	19/23
>	ACC 111 Introductory Accounting .....	4
	<b>OR</b>	
>	ACC 211 Principles of Accounting I .....	(4)
>	CST 105 Outlook .....	1
>	CST 151 Spreadsheet Fundamentals .....	2
>	CST 257 Database MS Access .....	3
* MGT 251	Business Law I .....	3
	MGT 255 Conflict Management.....	3
>	MGT 256 Human Resources Management I .....	3
>	MGT 274 Computer Aided Decisions .....	2
>	OAT 155 Editing.....	2
>	OAT 157 File Management.....	2
>	OAT 170 Keyboarding .....	2
>	OAT 171 Document Processing: Beginning .....	3
	General Electives .....	4
	Total Credits Required For Associate In Business Studies Degree	62/67

<b>Associate in Business Studies Retail Management</b>		
	General Education Courses (see above) .....	9/10
	Business Core Courses (see above).....	19/23
>	ACC 111 Introductory Accounting .....	4
	<b>OR</b>	
>	ACC 211 Principles of Accounting I .....	(4)
>1	ACE 105 Year I Experience I - Business & Human Services.....	3
>	MGT 247 Principles of Retailing.....	3
>*	MGT 251 Business Law I .....	3
	MGT 255 Conflict Management.....	3
>	Select four courses from the following:.....	12
>	MGT 143 Principles of Advertising .....	(3)
>	MGT 145 Principles of Sales .....	(3)
>*	MGT 151 Merchandising Display .....	(3)
>*	MGT 243 Principles of Marketing .....	(3)
>	MGT 248 Principles of Buying for Resale.....	(3)
>*	MGT 256 Human Resources Management I.....	(3)
	General Electives .....	6
	Total Credits Required For Associate In Business Studies Degree	62/67

#### Notations:

> **Certificate Option - A certificate will be awarded when you successfully complete courses preceded by the ">" sign.**

\* **A "C" (2.0) minimum grade is required in each asterisked course.**

- For more information about the Co-Op Program, phone 686-9474.
- You may be granted 20 credits approved by the Delta College Business Information and Technology Division Chair upon verification of the proper evidence of a current Michigan State Board of Cosmetology License.
- This course can be used to complete the Associate in Business Studies Degree General Management option online.
- Contact the Health & Wellness Division for information on completing LWA credit through individual instruction to complete the General Management degree option online.
- File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
- Delta College reserves the right to modify graduation requirements.
- If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

## Management/Subsequent Degree

*Career Pathway: Business, Management,  
Marketing and Technology*



### Options:

**Business Management  
Northwood 3+1**

### Associate in Business Studies Degree

Option I: Business Management: Students who already have an Associate or Bachelor Degree from a regionally accredited institution must have 24 credits by instruction at Delta College. Accordingly, the minimum number of credits earned must equal the credits required for the first degree plus 24. Included in the 24 credits will be at least one computer course, one accounting course and MGT 245.

Option II: 3 + 1 Northwood: Students who already have an Associate Degree in any field, (other than management programs) from a regionally accredited institution, who wish to obtain a Bachelor Degree in Management through the Delta College-Northwood partnership must complete the following Delta classes and then complete their senior year at Northwood.

#### Sem Hrs

#### Option I: Business Management

ACC 111	Introductory Accounting .....	4
<b>OR</b>		
ACC 211	Principles of Accounting I .....	(4)
ACC 212	Principles of Accounting II .....	4
CST 133	Computer Concepts & Competencies .....	4
<b>OR</b>		
CST 134	Micro Computers in Business Using MS Office .....	(3)
ECN 221	Principles of Economics I .....	4
MGT 153	Introduction to Business .....	3
MGT 243	Principles of Marketing .....	3
MGT 245	Principles of Management .....	3
MGT 251	Business Law I .....	3
MGT 256	Human Resources Management I .....	3
MGT 265	International Business .....	3
MGT 274	Computer Aided Decisions .....	2
---	Business Electives .....	3
OAT 151	Business Communication I .....	3

Total Credits Required For Associate Degree 24

#### Option II: 3 + 1 Northwood

ACC 211	Principles of Accounting I .....	4
ACC 212	Principles of Accounting II .....	4
CST 133	Computer Concepts & Competencies .....	4
ECN 221	Principles of Economics I .....	4
ECN 222	Principles of Economics II .....	4
MGT 153	Introduction to Business .....	3
MGT 243	Principles of Marketing .....	3
MGT 245	Principles of Management .....	3
MGT 251	Business Law I .....	3
MTH 208	Elementary Statistics .....	3
PHL 203	Business Ethics .....	3

#### OR

PHL 215	Health Care Ethics .....	(3)
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#### OR

PHL 230	Bioethics for Nursing .....	(2)
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Total Credits Required For Associate Degree 24

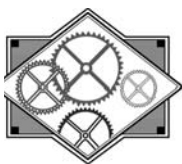
### Notations:

1. Official transcript documenting previous degree will have to be on file in Records and Registration.
2. Completion of the above classes will give you an Associate Degree in Business Management from Delta College. Some of the above credits may have been earned on an earlier degree, the minimum number of credits earned must equal the credits required for the first degree plus 24.

3. Contact the Delta College Counseling Office at 686-9330 for more information.
4. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
5. Delta College reserves the right to modify graduation requirements.
6. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

# Manufacturing and Industrial Technology

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



## Options:

Lean Manufacturing  
MIT Supervisor

## Associate in Applied Science Degree/ Certificate of Achievement

Manufacturing continues to advance by cutting across all disciplines in order to drive economic growth. This program is designed to give you the flexibility to acquire the knowledge and skills needed in this rapidly changing area. You will be able to develop a broad understanding of issues facing manufacturing today while also focusing on a specific area. As a manufacturing technologist, you will need to understand the interrelationships of materials selection and manufacturing processes in order to operate competitively in a global economy. You will also need to understand the roles quality, cost, delivery, safety and morale play in a successful manufacturing company. Teamwork, problem solving, and communication skills will be emphasized because of the importance they play in your success in the company. You will have experience with automated systems and robotic applications. You will need to be able to use computers to control and monitor processes and for communicating with team members, customers, suppliers, and others both internally and externally. Refer to [www.delta.edu/tech](http://www.delta.edu/tech) for more information.

**MIT SUPERVISOR CERTIFICATE:** Work, in an industrial setting, is accomplished through the actions of skilled, knowledgeable people. The ability to provide leadership and management expertise in such an environment while efficiently utilizing resources to accomplish the organization's goals requires its own set of skills. Teamwork, safety requirements, and the increasing diversity of the workforce are just a few of the issues today's supervisors need to effectively respond to in order to as they accomplish work in an organization. This certificate is designed to increase the knowledge and skills of supervisors so they can manage their resources in order to meet the company's goals.

**LEAN MANUFACTURING CERTIFICATE:** Companies need to effectively manage their value stream whether they are competing locally or on a global level. The focus of this certificate is to provide a person with the knowledge and skills to exam how a company can provide value to it customers whiel staying agile and competitive. It looks at the tools and techniques of value creation and waste reduction within manufacturing organizations while optimizing the company's resources.

## Sem Hrs

### General Education

---	---	Approved Natural Science with Lab (Refer to Group III Graduation Requirements) .....	4
ENG	---	Any Approved College Composition I Course .....	3/5
ENG	113	Technical Communication .....	3
>>	MTH	Any Approved Intermediate Algebra Course .....	4
POL	---	Any Approved American Government Requirement .....	3/4
LW	---	Any 1 Credit LW Course (As of fall 2007) .....	1
<b>AND</b>			
LWA	---	Any 1 Credit LWA Course .....	1
<b>OR</b>			
LW	---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
Subtotal			19/22

### Basic Program Requirements

*\$	CAD	114	Introduction to CAD .....	2
*\$	CAD	226	3D Parametric Solid Modeling .....	3
*	CNC	162	Computer Numerical Control Theory .....	4
*	DRF	121	Blueprint Reading .....	3
<b>OR</b>				
*	SKDR101		Sketching and Blueprint Reading .....	(4)
*	EET	235	Electrical Circuits .....	3
* , >>	MIT	118	Safety Practices and Procedures .....	2
* >>	MIT	111	Manufacturing Processes .....	3

*	MS	114	Industrial Technology Machine Tools .....	3
*	MT	220	Introduction to Fluid Power .....	3
*	MT	221	Introduction to Engineering Materials .....	3
* , >>	QA	244	Statistical Process Control .....	3

Subtotal 32/33

Choose One Area of Concentration to Complete Degree Requirements

### Supervision Concentration

>*	COM	114	Interpersonal Communication .....	3
>*	COM	202	Oral Communication for Managers .....	3
>*	MGT	245	Principles of Management .....	3
>*	MGT	256	Human Resources Management I .....	3
> , >>*	MIT	210	Lean Thinking Strategies .....	3
*	QA	125	Quality System Design .....	3
Subtotal				18

### Lean Concentration

*	MGT	153	Introduction to Business .....	3
>>*	MIT	212	Manufacturing Cell .....	2
>>*	MIT	210	Lean Thinking Strategies .....	3
>>*	MTH	208	Elementary Statistics .....	3
>>*	QA	125	Quality System Design .....	3
Subtotal				14

### Computer Numerical Control Concentration

*	CAD	120	Introduction to CAM .....	3
*	CNC	216	CNC with Machining Applications .....	4
*	CNC	225	Mastercam .....	4
*	DRF	128	Geometric Tolerancing .....	2
*	MT	110	Machine Tool Calculations .....	4
Subtotal				17

Total Credits Required For Associate Degree 65/73

## Notations:

\* A "C" minimum grade is required in each asterisked course.

**\$ Key Course:** Key courses must be completed within 5 years of completing certificate or degree. Failure to complete within the stated time frame will require you to repeat this course.

**> Certificate Option:** A certificate of achievement in MIT will be awarded when courses preceded by a greater than (">") sign are successfully completed.

**>> Certificate Option:** A certificate of achievement in Lean Manufacturing will be awarded when courses preceded by a greater than (">>") sign are successfully completed.

1. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
2. Delta College reserves the right to modify graduation requirements.
3. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

## Massage Therapy

Career Pathway: Health Science



### Post Associate Certificate/ Certificate of Achievement

The Massage Therapy Program is designed for graduates of fully accredited PTA Programs, OTR's, and for the licensed PT, RN, and PN. This program has been developed to build on your previous academic background, and current clinical practice. While completing this certificate program, you will be trained in Swedish Massage, Sports Massage, Trigger Point Therapy, Muscle Isolation Techniques, Myofascial Release, Reflexology, Chair Massage, Acupressure, Basic Shiatsu, Business and Marketing, and Ethics. Potential work settings include: chiropractic and physician offices, sports medicine clinics, aerobic studios, beauty salons, health spas, gyms, on-site corporate massage, or your own independent business. Upon successfully completing this program, you will be certified to practice massage in Michigan as a certified massage therapist (CMT), and be able to sit for the National Certification Examination in Therapeutic Massage and Bodywork.

Sem Hrs

#### Certificate of Achievement

1	Licensed Practical Nurse Certificate.....	
MTP 301	Manual Techniques I.....	6
	Total Credits Required For Certificate Of Achievement	6

#### Post Associate Certificate

1	Licensed Register Nurse Degree OR	
	Physical Therapist Assistant Degree .....	
MTP 301	Manual Techniques I.....	6
	Total Credits Required For Post Associate Certificate	6

#### Notations:

1. A maximum of 14 students will be accepted each Fall semester into the Massage Therapy Program. The procedure for application to the program can be obtained from the program coordinators office, counseling office, or health and wellness office. Submit the completed application packet to the Program Coordinator before registration. Applications will be reviewed on a case-by-case basis, and acceptance into the program is granted by permission of instructor. Incomplete applications will not be accepted.
2. Prerequisite Qualifications are: a) be admitted to Delta College; and b) provide documentation reflecting one of the following: Graduation from a CAPTE accredited PTA Program, or Michigan Registered Occupational Therapist with current registration, or Michigan licensed PT, RN, or PN, with current license.
3. Students must document in their application packet, evidence of prerequisite related coursework acquired through their previous formal training program. A minimum number of classroom hours are required in each of the following subject/content areas:
  - \*Anatomy and Physiology - 150 Hours
  - \*Bed Mobility, Transfers, Positioning, and Draping - 8 Hours
  - \*Body Mechanics - 2 Hours
  - \*Universal Precautions, Sterile Techniques, Hygiene Standards, Infectious Diseases, and Infection Control - 5 Hours
  - \*Disease and Pathology - 40 Hours
  - \*Professional Communication and Documentation - 10 Hours
  - \*Patient and Client Assessment Skills - 40 Hours

A specific form will be provided to you in the application packet that you will use to address these prerequisite areas.

The Program Coordinator reserves the right to deny enrollment into the program if prerequisite coursework does not meet established minimum requirements.

4. Program Costs: Students will be required to purchase/provide the following: 1) textbooks; 2) student handbook; 3) table linens; 4) massage creams and/or oils; 5) current malpractice insurance; and 6) current CPR certification (for admission to and must be maintained throughout the program.).

5. Massage Therapy Program course if offered in a combination of weekday and weekend hours, in short/intensive time frames, to accommodate the working professional. Due to these condensed time frames, attendance is mandatory at all sessions in order to successfully complete the course. Makeup classes will occur at the discretion of the instructor. A minimum grade of "C" or 77% is required to successfully complete the course.
6. Students must be admitted to Delta College, and have their official transcripts sent directly to the Admissions office.
7. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
8. Delta College reserves the right to modify graduation requirements.



# Mechanical Engineering Technology

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



## Associate in Applied Science Degree

This program provides you with a sufficient broad base in the fundamentals of mechanical technology, drafting, CAD, manufacturing and design to be successful as a mechanical engineering technician in a metallurgical or product test laboratory, as a field technician, as an engineering aide in manufacturing or product engineer, in quality control, or in sales and service. Responsibilities as a lab technician may include not only setting up a test apparatus and running tests on an experimental product, but also writing the report and making recommendations.

Sem Hrs

### General Education Courses

CHM 101	General Chemistry I.....	5
OR		
CHM 107	Chemistry for Engineering Technology.....	(4)
OR		
CHM 111	General and Inorganic Chemistry I.....	(5)
ENG ---	Any Approved College Composition I Course.....	3/5
ENG ---	Any Approved College Composition II Course.....	3/5
OR		
ENG 113	Technical Communication.....	(3)
GEO 116	Professional Global Awareness.....	1
LW ---	Any 1 Credit LW Course (As of fall 2007).....	1
AND		
LWA ---	Any 1 Credit LWA Course.....	1
OR		
LW ---	Any 2 Credit LW Course (As of fall 2007).....	(2)
MTH ---	Any Approved Intermediate Algebra Course.....	4
MTH 121	Plane Trigonometry.....	3
MTH 208	Elementary Statistics.....	3
PHL 207	Engineering Ethics.....	1
PHY 111	General Physics I.....	4
POL ---	Any Approved American Government Requirement.....	3/4

Subtotal 31/37

### Program Requirements

*2	ACE 285	Internship: Design Technology.....	1
*\$	CAD 114	Introduction to CAD.....	2
*\$	CAD 226	3D Parametric Solid Modeling.....	3
*	DRF 104	Basic Mechanical Design.....	4
OR			
*	DRF 105	Beginning Mechanical Drafting.....	(3)
*	DRF 107	Intermediate Mechanical Design.....	3
*\$1	DRF 257	Advanced Mechanical Design.....	4
*	EET 235	Electrical Circuits.....	3
*	MIT 111	Manufacturing Processes.....	3
*	MS 113	Machining Processes.....	2
OR			
*	MS 114	Industrial Technology Machine Tools.....	(3)
*	MT 220	Hydraulics & Pneumatics I.....	3
*	MT 221	Introduction to Engineering Materials.....	3
*	MT 251	Statics and Dynamics.....	3
*	MT 252	Strength of Materials.....	3
*	MT 256	Machine Design.....	3

Subtotal 39/41

Total Credits Required For Associate Degree 70/78

### Notations:

\* A "C" minimum grade is required in each asterisked course.

\$ Key Course: Key courses must be completed within 5 years of completing certificate or degree. Failure to complete within the stated time frame will require you to repeat this course. See graduation requirements page.

1. DRF 257 will be offered face-to-face for 15 weeks in the fall only.
2. In a ladder program, ACE 285 is only required to be taken one time.
3. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
4. Delta College reserves the right to modify graduation requirements.
5. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



## Medical Office Professions

*Career Pathway: Business, Management,  
Marketing and Technology*



### Options:

**Health Insurance Coding & Claims  
Specialist**  
**Medical Secretary**  
**Medical Transcription Specialist**

### Associate in Business Studies Degree/ Advanced Certificate

The efficiency of a medical office and the quality of medical care provided depend in large part upon the staff members who supplement and support the role of the physician. As a medical office staff member, you must have strong communication skills, organizational ability, computer knowledge, and excellent human relations skills.

Medical transcription specialists enter patient care documentation into medical records as well as complete physicians' correspondence and reports. Health insurance coding and claims specialists accurately report physician services for reimbursement to patients' insurance companies. Medical secretaries understand and use medical terminology; complete medical insurance claims; handle correspondence, medical records and physicians' dictation; greet and direct patients; and manage appointment schedules and the telephone. They are also required to understand the legal responsibilities of medical office staff members.

#### Sem Hrs

#### Core Courses (required for all options)

>*6	HSC 105	Medical Terminology .....	2
>\$	HSC 205	Legal Aspects of the Health Care System .....	2
>6	HSC 210	Medical Office Pharmacology .....	1
>	OAT 105	Time Management .....	1
>*2,4	OAT 151	Business Communication I .....	3
>*6	BIO 101	Introduction to Anatomy and Physiology .....	4
Subtotal			13

#### Medical Transcription Specialist

Core Courses .....			13
>*\$1,5	OAT 171	Document Processing: Beginning .....	3
>*\$1,4	OAT 172	Document Processing: Intermediate .....	3
>*\$4	OAT 260	Medical Transcription: Beginning .....	3
>*\$	OAT 262	Medical Transcription: Intermediate .....	3
Total Credits Required For Advanced Certificate			25

#### Health Insurance Coding & Claims Specialist

Core Courses .....			13
>*\$1,5	OAT 171	Document Processing: Beginning .....	3
>*\$	OAT 243	Diagnostic Coding .....	3
>*\$	OAT 244	Procedure Coding .....	3
>*\$	OAT 254	Medical Insurance I .....	3
>*\$	OAT 255	Medical Insurance II .....	3
Total Credits Required For Advanced Certificate			28

#### Medical Secretary

Core Courses .....			13
1	MGT 153	Introduction to Business .....	3
	PHL 203	Business Ethics .....	3
\$	HSC 140	Basic Medical Emergencies .....	2
3	OAT 116	Introduction to the Medical Office .....	2
*2	OAT 152	Business Communication II .....	3
OR			
*	ENG 111	Any College Composition I .....	AND (3/5)
*	ENG 112	Any College Composition II .....	OR (3/5)
*	ENG 113	Technical Communication .....	(3)
1	OAT 155	Editing .....	2
1	OAT 157	File Management .....	2
>*\$1,4	OAT 172	Document Processing: Intermediate .....	3
1,3	OAT 175	Electronic Calculation .....	2
*\$	OAT 243	Diagnostic Coding .....	3
*\$	OAT 244	Procedure Coding .....	3

*\$4	OAT 254	Medical Insurance I .....	3
*\$	OAT 255	Medical Insurance II .....	3
*\$4	OAT 260	Medical Transcription: Beginning .....	3
*\$4,7	OAT 266	Medical Office Practice .....	4
*\$	OAT 273	Document Processing: Advanced .....	3
Subtotal			57/64

#### General Education Courses

LW	---	Any 1 Credit LW Course (As of fall 2007) .....	1
AND			
LWA	---	Any 1 Credit LWA Course .....	1
OR			
LW	---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
POL	---	Any Approved American Government Requirement .....	3/4
Subtotal			5/6
Total Credits Required For Associate Degree			62/70

#### Notations:

**> A Certificate will be awarded when courses preceded by a greater than (">") sign are successfully completed.**

**\* A "C" minimum grade is required in each asterisked course.**

**\$ Key Course: Key courses must be completed within 5 years of completing certificate or degree. Failure to complete within the stated time frame will require you to repeat this course.**

- Credit by exam is available for MGT 153, OAT 155, OAT 157, OAT 171, OAT 172, and OAT 175. Keyboarding waiver test is available for OAT 170. Contact the BIT Division office, 989-686-9127, to arrange for waiver test.
- Keyboarded assignments required for OAT 151 Business Communication I and OAT 152 Business Communication II.
- OAT 175 Electronic Calculation and OAT 116 Introduction to the Medical Office require MATH LEVEL 2.
- OAT 151, OAT 172, OAT 254, and OAT 260 are prerequisites for OAT 266 Medical Office Practice.
- OAT 170 Keyboarding with a "B" grade or better or equivalent computer background with accurate touch typing speed of at least 25 words per minute is a prerequisite for OAT 171 Document Processing: Beginning.
- HSC 105 and one of the following: BIO 101, BIO 131, BIO 132, BIO 140, BIO 152, BIO 153, BIO 160, or BIO 240, both with a minimum grade of "C" (2.0) are prerequisites for HSC 210.
- OAT 266 is a winter-only offering.
- File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
- Delta College reserves the right to modify graduation requirements.
- If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

# Nursing (ADN)

Career Pathway: Health Science



## Associate in Applied Science Degree

The ADN program prepares you to function effectively as a member of the health care team. This program requires a strong commitment to critical thinking, team collaboration, leadership, and development of sound clinical knowledge and skills. As a graduate nurse, you will be qualified for employment in structured settings: for example, acute care hospitals, extended care facilities, nursing homes, and clinics. Upon successfully completing this program, you are eligible to take the Registered Nurse licensure exam. This Delta College program is accredited by the National League for Nursing Accrediting Commission (3343 Peachtree Road NE, Suite 500, Atlanta, GA 30328; ph: 404-975-5000 or go to [www.nlnac.org](http://www.nlnac.org)) and approved by the Michigan Board of Nursing.

### Sem Hrs

You must have a combined GPA of 2.5 or higher in all courses for the program in order to qualify for validation unless otherwise noted.

### Core Courses

+1, 3 BIO 152	Human Anatomy & Physiology I	AND	4
+1, 3 BIO 153	Human Anatomy & Physiology II		4

### OR

+1, 3 BIO 240	Human Anatomy	AND	(4)
+1, 3 BIO 241	Physiology		(4)
*1, 3 BIO 203	General Microbiology		4
+3 ENG ---	Any Approved College Composition I Course		3/5
*3 ENG ---	Any Approved College Composition II Course		3/5
*3 MTH 117	Math for Allied Health or Comp Test		2/0
*3 NUR 100A	Introduction to Nursing Careers		1
*3 PHL 215	Health Care Ethics		3

### OR

*3 PHL 230	Bioethics for Nursing		(2)
+3 PHM 285	Pharmacology for Health Care Professionals		3

Subtotal 24/31

A minimum of 6 general education credits from list below required for validation. All credits required for graduation.

### General Education Courses

*3 LW ---	Any 1 Credit LW Course (As of fall 2007)		1
AND			
*3 LWA ---	Any 1 Credit LWA Course		1
OR			
*3 LW ---	Any 2 Credit LW Course (As of fall 2007)		(2)
*3 POL ---	Any Approved American Government Requirement		3/4
*3 PSY 211	General Psychology		4
*3 SOC 211	Principles of Sociology		3

Subtotal 12/13

### CLINICAL SEQUENCE (Full-and Part-time Program)

Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application!" and be officially validated. See Validation Procedure in this catalog for the required process.

### Basic Program Requirements: Full-time ADN Track: Runs over 4 semesters Fall/Winter

* NUR 101A	Nursing Fundamentals	AND	3.5
* NUR 101AL	Nursing Fundamentals Lab		1.5
* NUR 101B	Care of the Aging Adult	AND	2.0
* NUR 101BL	Care of the Aging Adult Lab		2.0
* NUR 115	Maternity Nursing	AND	2.0
* NUR 115L	Maternity Nursing Lab		1.0
* NUR 116	Pediatric Nursing	AND	2.0
* NUR 116L	Pediatric Nursing Lab		1.0
* NUR 119	Mental Health Nursing	AND	2.0
* NUR 119L	Mental Health Nursing Lab		1.0
* NUR 240	Basic Nursing Care of the Adult Client	AND	4.7
* NUR 240L	Basic Nursing Care of the Adult Lab		4.3

* NUR 250	Nursing Care and Management Throughout the Health Continuum	AND	4.0
* NUR 250L	Nursing Care and Management Throughout the Health Continuum		5.0
Subtotal Of Full-time Adn Clinical Courses			36

OR

### Basic Program Requirements: Part-time ADN Track: Runs Year Round

* NPT 101A	Nursing Fundamentals	AND	3.5
* NPT 101AL	Nursing Fundamentals Lab		1.5
* NPT 101B	Care of the Aging Adult	AND	2.0
* NPT 101BL	Care of the Aging Adult Lab		2.0
* NPT 115	Maternity Nursing	AND	2.0
* NPT 115L	Maternity Nursing Lab		1.0
* NPT 116	Pediatric Nursing	AND	2.0
* NPT 116L	Pediatric Nursing Lab		1.0
* NPT 119	Mental Health Nursing	AND	2.0
* NPT 119L	Mental Health Nursing Lab		1.0
* NPT 240	Basic Nursing Care of the Adult Client	AND	4.7
* NPT 240L	Basic Nursing Care of the Adult Client Lab		4.3
* NPT 250	Nursing Care and Management Throughout the Health Continuum	AND	4.0
* NPT 250L	Nursing Care and Management Throughout the Health Continuum Lab		5.0
Subtotal Of Part-time Adn Clinical Courses			36

Total Credits Required For Associate Degree (full- Or Part-time) 72/80

### Notations:

\* A "C" minimum grade is required for this course.

+ A "B" minimum grade is required for this course.

- Students must have completed BIO 152 and BIO 153 or BIO 240 and BIO 241 within the past ten years. If this time period is exceeded, an approved biology course must be taken to refresh this content. Please see the nursing program coordinator to determine which course(s) must be taken. It is recommended that BIO 203 also be current within ten years.
- It is important that you check a semester ahead of time when you plan on validating for the nursing program to make sure course requirements have not changed. Updated information can be found through the nursing web page: [www.delta.edu/nursing](http://www.delta.edu/nursing), calling the Counseling Office (989-686-9330) or the Nursing Discipline Office (989-686-9500 or 989-686-9274).
- Prerequisite qualifications for validation are: (a) be admitted to Delta College, (b) provide official transcripts reflecting high school diploma or GED, and all other colleges or training institutions attended; completion of BIO 152, BIO 153, ENG 111, and PHM 285 with a minimum grade of "B" (3.0); and completion of the remaining core/prerequisite courses with a "C" (2.0) minimum grade and a combined GPA of 2.5 or greater, and completion of at least 6 credit hours from the General Ed courses with a "C" grade or better. All General Education courses must be taken prior to graduation from the program. If pursuing a BSN degree, PHL 215 is recommended.
- Due to limited capacity of clinical facilities and the specific requirements of the accreditation agencies, this Program is considered a "limited enrollment" program. You will be eligible to attempt to register for clinical courses only after successfully completing the prerequisite qualifications and receiving a "Semester and Year of Validation" from the Registrar's Office.
- The Nursing Student Handbook contains additional information, requirements and specific program policies that you are required to comply with while enrolled in the nursing program. See [www.delta.edu/nursing](http://www.delta.edu/nursing) Nursing Student Handbook. You must comply with all Nursing Program Policies.
- In addition to tuition and textbook costs, you must provide your own uniforms, clinic shoes, name tags and transportation to clinical agency settings, including possible parking charges. See [www.delta.edu/nursing](http://www.delta.edu/nursing) for program costs.
- Full-time ADN track courses start each Fall and each Winter Semester with NUR 101AW. Part-time ADN Track courses start Fall semester

only (NPT 101AW) with the program running year round. See web site: [www.delta.edu/nursing](http://www.delta.edu/nursing) for more information. A student who designates their ADN track of choice will remain in that track for validation. There will be some flexibility between tracks (Full-time or Part-time) once the student is in the clinical sequence, but the student will need to go through the Nursing Re-Entry Review Board for approval based on the seating availability (see Nursing Student Handbook: [www.delta.edu/nursing](http://www.delta.edu/nursing)).

8. Program-Entry Health Requirements: You must submit an up-to-date complete physical examination report to the Nursing Office prior to entrance into the first clinical course. As a clinical student, you are required to have a TB skin test completed annually. The physical examination must confirm that you are free from communicable disease and capable of performing all the duties necessary for the safe care of patients. A positive TB test will require a recent chest x-ray. Proof of Hepatitis B vaccine immunization must be submitted with the physical exam form or you must submit a signed waiver form. For persons born after 1957, documentation of immunization for MMR must be provided. Evidence of current (within ten years) Tetanus immunization status is required. You must submit all up-to-date health requirements to the Nursing Discipline Office prior to entrance into the first clinical course. CPR Training: You must have a CPR card, which must remain current throughout the clinical program. A photocopy of your certificate must be turned in to the Nursing Discipline Office prior to the start of classes. The CPR certification must include one and two person rescuer, child and infant rescuer, airway obstruction relief, and use of AED. Students with expired CPR certification, TB test, and/or physical exam will not be allowed to attend clinical.
9. Any student with a previous or current felony/misdemeanor conviction must inform the Nursing Program Coordinator of said conviction. Students should be aware that a felony/misdemeanor conviction may constitute grounds for ineligibility to sit for the Nursing Licensure examination. Students should be aware that the current licensure application form now requires that a criminal background check requiring fingerprinting be completed. Questions regarding licensure can be found at <http://www.michigan.gov/healthlicense> or be directed to the Michigan Board of Nursing at 517-335-0918.
10. All entering nursing students must be fingerprinted as part of health care agency requirements and for the Michigan Nursing Scholarship. Students will complete and sign a release form allowing Delta College Public Safety to complete a background check. Information about this process will be provided to the student at orientation. Results of the background check will be secured and kept confidential, but may be shared with clinical agencies when requested or as otherwise required by law. If results indicate a felony/misdemeanor conviction, the Nursing Program Coordinator will discuss the findings and the process with the student. A felony/misdemeanor conviction may delay or end the student's nursing education, delay graduation, or change the curriculum from which the student may graduate.
11. If a student in good standing or granted reentry into the program has a period of inactivity within a program track that exceeds three years, the student will need to revalidate for a program track and complete the entire clinical program.
12. A person can achieve PNE program completion if NUR/NPT 101A, NUR/NPT 101AL, NUR/NPT 101B, NUR/NPT 101BL, NUR/NPT 115, NUR/NPT 115L, NUR/NPT 116, NUR/NPT 116L, NUR/NPT 240, and NUR/NPT 240L are successfully completed.
13. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
14. Delta College reserves the right to modify graduation requirements.
15. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

**Also see "Dual Degrees."**



# Nursing RN Transition Track

Career Pathway: Health Science



## Options:

Licensed Paramedic To RN  
Licensed Practical Nurse To RN

## Associate in Applied Science Degree

Delta College offers a special track Associate Degree program for currently Licensed Practical Nurses (LPN) and currently Licensed Paramedics with 1-year equivalent work experience.

The ADN program prepares you to function effectively as a member of the health care team. This program requires a strong commitment to critical thinking, team collaboration, leadership, and development of sound clinical knowledge and skills. As a graduate nurse, you will be qualified for employment in structured settings: for example, acute care hospitals, extended care facilities, nursing homes, and clinics. Upon graduating from this Program, you are eligible to take the Registered Nurse licensure exam. This Delta College Program is accredited by the National League for Nursing Accrediting Commission (3343 Peachtree Road NE, Suite 500, Atlanta, GA 30326, ph: 404-975-5000 or go to [www.nlnac.org](http://www.nlnac.org)) and approved by the Michigan Board of Nursing.

## Sem Hrs

You must have a combined GPA of 2.5 or higher in the following courses in order to qualify for validation.

## Core Courses

+1,3 BIO 152	Human Anatomy & Physiology I	AND	4
+1,3 BIO 153	Human Anatomy & Physiology II		4
OR			
+1,3 BIO 240	Human Anatomy	AND	(4)
+1,3 BIO 241	Physiology		(4)
*1,3 BIO 203	General Microbiology		4
+3 ENG ---	Any Approved College Composition I Course		3/5
+3 ENG ---	Any Approved College Composition II Course		3/5
+3 MTH 117	Math for Allied Health or Competency Test		2/0
+3 PHL 215	Health Care Ethics		3
OR			
+3 PHL 230	Bioethics for Nursing		(2)
+3 PHM 285	Pharmacology for Health Care Professionals		3
Subtotal			23/30

A minimum of 6 general education credits from list below required for validation. All credits completed for graduation.

## General Education Courses

*3 LW ---	Any 1 Credit LW Course (As of fall 2007)		1
AND			
*3 LWA ---	Any 1 Credit LWA Course		1
OR			
*3 LW ---	Any 2 Credit LW Course (As of fall 2007)		(2)
*3 POL ---	Any Approved American Government Requirement		3/4
*3 PSY 211	General Psychology		4
*3 SOC 211	Principles of Sociology		3
Subtotal			12/13

Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application" and be officially validated. See Validation Procedures in this catalog for the required process.

## Basic Program Requirements: Clinical Program Requirements - Paramedic Option

*7 NT 160	Transitional Skills and Concepts	AND	1
*7 NT 160L	Transitional Skills and Concepts Lab		1
* NT 161	Transition - Basic Principles of Adult Care		2
* NT 162	Role and Function of the RN		2
* NT 163	Advanced Principles of Adult Care for the LPN/Licensed Paramedic	AND	3
* NT 163L	Advanced Principles of Adult Care for the LPN/Licensed Paramedic Lab		3

* NT 215	Transition-Maternity Nursing	AND	2
* NT 215L	Transition-Maternity Nursing Lab		1
* NT 216	Transition-Pediatric Nursing	AND	2
* NT 216L	Transition-Pediatric Nursing Lab		1
* NT 219	Transition-Mental Health Nursing	AND	2
* NT 219L	Transition-Mental Health Nursing Lab		1
* NUR 250	Nursing Care and Management Throughout the Health Continuum	AND	4
* NUR 250L	Nursing Care and Management Throughout the Health Continuum		5
Subtotal			30

## Basic Program Requirements: Clinical Program Requirements - LPN Option

Public Program Requirements - Public Program Requirements - LPN Option			
*7	NT	160	Transitional Skills and Concepts..... (1.0)
*7	NT	160L	Transitional Skills and Concepts Lab..... (1.0)
*	NT	161	Transition - Basic Principles of Adult Care..... 2.0
*	NT	162	Role and Function of the RN ..... 2.0
*	NT	163	Advanced Principles of Adult Care for the LPN/Licensed Paramedic .....AND 3.0
*	NT	163L	Advanced Principles of Adult Care for the LPN/Licensed Paramedic Lab ..... 3
*	NT	215	Transition-Maternity Nursing.....AND 2.0
*	NT	215L	Transition-Maternity Nursing Lab..... 1.0
*	NT	216	Transition-Pediatric Nursing .....AND 2.0
*	NT	216L	Transition-Pediatric Nursing Lab ..... 1.0
*	NT	219	Transition-Mental Health Nursing .....AND 2.0
*	NT	219L	Transition-Mental Health Nursing Lab ..... 1.0
*	NUR	250	Nursing Care and Management Throughout the Health Continuum .....AND 4.0
*	NUR	250L	Nursing Care and Management Throughout the Health Continuum ..... 5.0
			Subtotal 28/30

Total Credits Required For Associate Degree: Paramedic Option 65/73

Total Credits Required For Associate Degree: Lpn Option 63/73

## Notations:

\* A "C" minimum grade is required in each asterisked course.

+ A "B" minimum grade is required for this course.

- Students must have completed BIO 152 and BIO 153 or BIO 240 and BIO 241 within the past ten years. If this time period is exceeded, an approved biology course must be taken to refresh this content. Please see the nursing program coordinator to determine which course(s) must be taken. It is recommended that BIO 203 also be current within ten years.
- It is important that you check a semester ahead of time when you plan on validating for the nursing program to make sure course requirements have not changed. Updated information can be found through the nursing web page: [www.delta.edu/nursing](http://www.delta.edu/nursing), calling the Counseling Office (989-686-9330) or the Nursing Discipline Office (989-686-9500 or 989-686-9274).
- Prerequisite qualifications for validation are: (a) be admitted to Delta College, (b) provide official transcripts reflecting high school diploma or GED, and all other colleges or training institutions attended; completion of BIO 152, BIO 153, ENG 111, and PHM 285 with a minimum grade of "B" (3.0); and completion of the remaining core/prerequisite courses with a "C" (2.0) minimum grade and a combined GPA of 2.5 or greater, and completion of at least 6 credit hours from the General Ed courses with a "C" grade or better. All General Education courses must be taken prior to graduation from the program. If pursuing a BSN degree, PHL 215 is recommended.
- Due to limited capacity of clinical facilities and the specific requirements of the accreditation agencies, this Program is considered a "limited enrollment" program. You will be eligible to attempt to register for clinical courses only after successfully completing the prerequisite qualifications and receiving a "Semester and Year of Validation" from the Registrar's Office.
- The Nursing Student Handbook contains additional information, requirements and specific program policies that you are required to comply with while enrolled in the nursing program. See [www.delta.edu/nursing](http://www.delta.edu/nursing) Nursing Student Handbook. You must comply

with all Nursing Program Policies.

6. In addition to tuition and textbook costs, you must provide your own uniforms, clinic shoes, name tags and transportation to clinical agency settings, including possible parking charges. See [www.delta.edu/nursing](http://www.delta.edu/nursing) for program costs.
7. Admission to the NT track is yearly, usually Winter semester. NT 160 and NT 160L are required for Paramedics and strongly recommended for LPNs not in the acute care practice setting. Only current licensed LPNs and licensed Paramedics have the option to take the Transition Track leading to RN licensure. Proof of current licensure must be provided to Records and Registration at the time of validation. A minimum of one-year full-time equivalent work experience required before entering into clinicals verified by the program coordinator. The PN graduate from another school of nursing who transfers to the Delta LPN/Licensed Paramedic to ADN Transition track or the PN graduate from the Delta College Practical Nursing program who wishes to by-pass the minimum of one-year full-time equivalent work experience required before entering into clinicals, may do so after meeting the following requirements:

- Successfully graduate from PN program (or transfer into Delta College from another PN program)
- Completes all required pre-requisite courses for the ADN program validation
- Maintains a GPA of 3.0 or higher throughout ADN pre-requisite courses and PN clinical courses
- Successfully pass the NCLEX-PN
- Apply for LPN to ADN validation after graduation from PN program
- Register for LPN to ADN clinical entry

8. Program-Entry Health Requirements: You must submit an up-to-date complete physical examination report to the Nursing Office prior to entrance into the first clinical course. As a clinical student, you are required to have a TB skin test completed annually. The physical examination must confirm that you are free from communicable disease and capable of performing all the duties necessary for the safe care of patients. A positive TB test will require a recent chest x-ray. Proof of Hepatitis B vaccine immunization must be submitted with the physical exam form or you must submit a signed waiver form. For persons born after 1957, documentation of immunization for MMR must be provided. Evidence of current (within ten years) Tetanus immunization status is required. You must submit all up-to-date health requirements to the Nursing Discipline Office prior to entrance into the first clinical course. CPR Training: You must have a CPR card, which must remain current throughout the clinical program. A photocopy of your certificate must be turned in to the Nursing Discipline Office prior to the start of classes. The CPR certification must include one and two person rescuer, child and infant rescuer, airway obstruction relief, and use of AED. Students with expired CPR certification, TB test, and/or physical exam will not be allowed to attend clinical.
9. Any student with a previous or current felony/misdemeanor conviction must inform the Nursing Program Coordinator of said conviction. Students should be aware that a felony/misdemeanor conviction may constitute grounds for ineligibility to sit for the Nursing Licensure examination. Students should be aware that the current licensure application form now requires that a criminal background check requiring fingerprinting be completed. Questions regarding licensure can be found at <http://www.michigan.gov/healthlicense> or be directed to the Michigan Board of Nursing at 517-335-0918.
10. All entering nursing students must be fingerprinted as part of health care agency requirements and for the Michigan Nursing Scholarship. Students will complete and sign a release form allowing Delta College Public Safety to complete a background check. Information about this process will be provided to the student at orientation. Results of the background check will be secured and kept confidential, but may be shared with clinical agencies when requested or as otherwise required by law. If results indicate a felony/misdemeanor conviction, the Nursing Program Coordinator will discuss the findings and the process with the student. A felony/misdemeanor conviction may

delay or end the student's nursing education, delay graduation, or change the curriculum from which the student may graduate.

11. If a student in good standing or granted reentry into the program has a period of inactivity within a program track that exceeds three years, the student will need to revalidate for a program track and complete the entire program.
12. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
13. Delta College reserves the right to modify graduation requirements.
14. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

Also see "Dual Degrees."



## Office Professions

*Career Pathway: Business, Management,  
Marketing and Technology*



### Options:

**Administrative Assistant**  
**Office Assistant**  
**Office Skills Core**  
**Office Specialist**

### Associate in Business Studies Degree/ Certificate of Achievement/ Advanced Certificate

Office professions continue to evolve along with new office automation and organizational restructuring. In many cases, office professionals have assumed new responsibilities and learned to operate a variety of office equipment. Most organizations employ office professionals to perform and coordinate office activities and to ensure that information is disseminated to staff and clients. Managers, professionals, and other support staff rely on them to keep administrative operations under control.

Office professionals are responsible for a variety of clerical and administrative duties that are necessary to run and maintain organizations efficiently. They use personal computers to communicate electronically and to run spreadsheet, word processing, database management, desktop publishing, and graphics programs.

Administrative assistants perform fewer clerical tasks than lower-level office professionals. In addition to receiving visitors, arranging conference calls, and answering letters, they may handle more complex responsibilities such as conducting research, preparing statistical reports, and supervising other clerical staff.

#### Sem Hrs

The following certificates have been ladderized (sequenced) to lead to the completion of the associate degree:

#### Office Skills Core

>\$	CST	106	Internet Foundations.....	1
>	OAT	105	Time Management.....	1
>*2,3	OAT	150	Business English.....	3
>1	OAT	157	File Management.....	2
>*\$1,5, 11	OAT	171	Document Processing: Beginning.....	3
>1, 12	OAT	175	Electronic Calculation.....	2

Total Credits Required For Office Skills Core Certificate Of Achievement 12

#### Office Assistant

			Office Skills Core Certificate of Achievement.....	12
>\$1	CST	105	Outlook.....	1
>\$	CST	147	Presentation Graphics Using PowerPoint.....	2
>*\$1, 10	CST	151	Spreadsheet Fundamentals.....	2
>	PHL	203	Business Ethics.....	3
>*2, 6	OAT	151	Business Communication I.....	3
>*\$1	OAT	172	Document Processing: Intermediate.....	3

Total Credits Required For Office Assistant Advanced Certificate 26

#### Office Specialist

			Office Assistant Advanced Certificate.....	26
>\$1	CST	103	Windows Foundations.....	1
>*\$	CST	107	Microsoft Publisher.....	1
>\$	CST	110	Web Page Development Using HTML.....	1
>*\$	CST	257	Database MS Access.....	3
>*6	OAT	152	Business Communication II.....	3
			<b>OR</b>	
*	ENG	---	Any Approved College Composition I Course.....	AND (3/5)
*	ENG	---	Any Approved College Composition II Course.....	OR (3/5)
	ENG	113	Technical Communication.....	(3)
>1	OAT	155	Editing.....	2
>\$7, 8	OAT	166	Office Internship.....	3
>\$9	OAT	285	Office Technology.....	3

Total Credits Required For Office Specialist Advanced Certificate 43/50

#### Administrative Assistant

			Office Specialist Advanced Certificate.....	43/50
4	ACC	111	Introductory Accounting.....	4
			<b>OR</b>	
4	ACC	211	Principles of Accounting I.....	(4)
1	MGT	153	Introduction to Business.....	3
*\$	OAT	268	Administrative Office Practices.....	3
*\$	OAT	273	Document Processing: Advanced.....	3
	COM	202	Oral Communication for Managers.....	3
			Subtotal.....	59/66

#### General Education Courses

LW	220	Lifelong Wellness.....	1
		<b>AND</b>	
LWA	---	Any 1 Credit LWA Course.....	1
		<b>OR</b>	
LW	---	Any 2 Credit LW Course (As of fall 2007).....	(2)
POL	---	Any Approved Government Requirement.....	3/4
		Subtotal.....	5/6

Total Credits Required For Administrative Assistant Associate Degree 64/72

#### Notations:

\* A "C" minimum grade is required in each asterisked course.

> A Certificate will be awarded when courses preceded by a greater than (">") sign are successfully completed.

\$ Key Course: Key courses must be completed within 5 years of completing certificate or degree. Failure to complete within the stated time frame will require you to repeat this course.

- Credit by examination is available for CST 103, CST 105, CST 151, OAT 155, OAT 157, OAT 171, OAT 172, OAT 175, and MGT 153. Keyboarding waiver test is available for OAT 170. Contact the BIT Division office, 989-686-9127, to arrange for waiver test.
- OAT 151 Business Communication I may be substituted for OAT 150 Business English with satisfactory assessment testing score.
- If OAT 150 is not required, three credits of electives must be taken to complete the Office Assistant Certificate.
- If you are planning to transfer, you should select ACC 211.
- Keyboarded assignments required for OAT 151 Business Communication I and OAT 152 Business Communication II.
- Students must apply for placement in OAT 166 Office Internship in semester previous to anticipated placement.
- ACE Year 1 Experience or ACE 280, or ACE 285 may be substituted for OAT 166 Office Internship. Contact the Office of Academic Career Education and Experiential Learning for more information and permission to register.
- On-site visitations required in OAT 285 Office Technology.
- CST 155 Microsoft Excel may be used to substitute for CST 151 Spreadsheet Fundamentals.
- OAT 170 Keyboarding with a "B" grade or better or equivalent computer background with accurate touch typing speed of at least 25 words per minute is a prerequisite for OAT 171 Document Processing: Beginning.
- OAT 175 Electronic Calculation requires MATH LEVEL 2.
- OAT 285 Office Technology is a fall-only class.
- OAT 268 Administrative Office Practices is a winter-only class.
- File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
- Delta College reserves the right to modify graduation requirements.
- If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



## Personal Trainer

Career Pathway: Human Services



### Advanced Certificate

Upon completion of the Personal Trainer Certificate Program, you will have the knowledge and skills necessary to effectively assist apparently healthy individuals and those with controlled diseases in exercising safely and achieving higher levels of fitness or athletic performance. This program will provide the knowledge and practical experience in all of the following areas: client consultation and assessment, fitness program development, exercise techniques, safety procedures, and legal issues. Upon completion of this program, you will be eligible to sit for the American Council on Exercise (ACE) certification exam or the National Strength and Conditioning Association (NSCA) Certified Personal Trainer exam.

	Sem	Hrs
<b>Basic Program Requirements</b>		
* BIO 101 Introduction to Anatomy And Physiology .....		4
<b>OR</b>		
* BIO 152 Human Anatomy & Physiology I .....		(4)
<b>OR</b>		
* BIO 140 Essentials Of Human Anatomy & Physiology .....		(5)
* COM 202 Oral Communication for Managers .....		3
* LW 220 Lifelong Wellness .....		1
* HSC 140 Basic Medical Emergencies .....		2
<b>OR</b>		
* LWT 165 Community First Aid .....		(1)
<b>AND</b>		
* LWT 170 BLS for the Health Care Provider .....		(1)
* LWT 210 Nutrition: The Science of Optimal Living .....		3
* LWT 230 Theory of Strength and Conditioning .....		3
* LWT 240 Health Fitness Instructor/Personal Trainer .....		4
* LWT 251 Exercise Physiology .....		4
* LWT 255 Health Fitness Management and Promotion .....		3
LWA --- Lifelong Wellness Elective from Category A .....		1
LWA --- Lifelong Wellness Elective from Category B .....		1
Subtotal		29/30.5
<b>LWA Electives - Category A (Choose from list below for Basic Program Requirements)</b>		
* LWA 101 Fitness for Life .....		1
* LWA 106 Athletic Conditioning .....		1
* LWA 108 Weight Training .....		1
* LWA 111 Circuit Training .....		1
Subtotal		
<b>LWA Electives - Category B (Choose from list below for Basic Program Requirements)</b>		
* LWA 151 Kick Boxing .....		1
* LWA 152 Astanga Yoga .....		1.5
* LWA 154 BOSU Ball Training .....		1
* LWA 156 Stability Ball Training .....		1
* LWA 158 Pilates .....		1
Subtotal		
Total Credits Required For Certificate		29/30.5

### Notations:

- \* **A "C" minimum grade is required in each asterisked course.**
- 1. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
- 2. Delta College reserves the right to modify graduation requirements.

# Physical Therapist Assistant

Career Pathway: Health Science



## Associate in Applied Science Degree

Delta's program is for the training of Physical Therapist Assistants only. If you are planning to become a Physical Therapist, you should follow the Pre-Physical Therapy program guide and meet with a counselor.

As a Physical Therapist Assistant, you will work under the direction and supervision of Physical Therapists. Such settings include: acute care hospitals, rehabilitation centers, school systems, nursing homes, home care, out-patient facilities, private clinics, and specialty clinics. As a graduate of this program, you will be able to carry out patient treatment programs designed by the Physical Therapist that utilize heat, cold, light, sound, massage, therapeutic exercise, aquatics, manual therapy, and rehabilitation procedures. This program is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE).

### Sem Hrs

Option A - Regular Track (Students can take and complete these validation courses at their own pace.)

#### General Education Courses

+2	BIO	140	Essentials of Human Anatomy & Physiology .....	5
			<b>OR</b>	
+2	BIO	152	Human Anatomy & Physiology I .....	AND (4)
+2	BIO	153	Human Anatomy & Physiology II .....	(4)
			<b>OR</b>	
+2	BIO	240	Human Anatomy .....	AND (4)
+2	BIO	241	Physiology .....	(4)
*2	COM	114	Interpersonal Communication .....	3
*2	ENG	111	College Composition I .....	3
*2	HSC	105	Medical Terminology .....	2
*/%	POL	---	Any Approved American Government Requirement .....	3/4
*2	PSY	101	Applied Psychology .....	3
			<b>Subtotal</b>	<b>19/23</b>

Option B - Accelerated Track (Students must take these validation courses in one semester.)

#### General Education Courses

+3	BIO	140	Essentials Of Human Anatomy & Physiology .....	5
*3	COM	114	Interpersonal Communication .....	3
*3	ENG	111	College Composition I .....	3
*3	HSC	105	Medical Terminology .....	2
*/%	POL	---	Any Approved American Government Requirement .....	3/4
*3	PSY	101	Applied Psychology .....	3
			<b>Subtotal</b>	<b>19/20</b>

Prior to attempting to register to begin the clinical sequence, you must complete the Validation Application including observation requirements, and be officially validated. See Validation Procedures in this catalog for the required process.

#### Clinical Program Course Sequence

##### Semester 1 (Fall)

*	PTA	101	Applied Clinical Anatomy I .....	2
*	PTA	101L	Applied Clinical Anatomy I Lab .....	1
*	PTA	105	Physical Agents I .....	2
*	PTA	105L	Physical Agents I Lab .....	2
*	PTA	110	Fundamentals of Patient Mobility .....	2
*	PTA	110L	Fundamentals of Patient Mobility Lab .....	1
*.5	ENG	113	Technical Communication .....	3
*	LW	206A	Occupational Wellness 1 .....	1
			<b>Subtotal</b>	<b>14</b>

##### Semester 2 (Winter)

*	PTA	102	Clinical Neuroanatomy .....	2
*	PTA	120	Orthopedic Rehabilitation .....	2
*	PTA	120L	Orthopedic Rehabilitation Lab .....	1
*	PTA	121	Human Growth and Development .....	3

*	PTA	123	Clinical Medicine .....	2.5
*	PTA	123L	Clinical Medicine Lab .....	.5
*	PTA	124	PTA Clinic I .....	2
*	PTA	125	Measurements Techniques .....	1
*	PTA	125L	Applied Clinical Anatomy II Lab .....	1
*	LWA	206B	Occupational Wellness 2 .....	.5
			<b>Subtotal</b>	<b>15.5</b>

##### Semester 3 (Spring/Summer) Optional

*	PTA	121	Human Growth and Development .....	(3)
*	PTA	209	Fundamentals of Pediatric Rehabilitation .....	(.5)
*	PTA	209L	Fundamentals of Pediatric Rehabilitation Lab .....	(.5)
			<b>Subtotal</b>	<b>(4)</b>

##### Semester 4 (Fall)

*	PTA	205	Physical Agents II .....	.5
*	PTA	205L	Physical Agents II Lab .....	.5
*	PTA	209	Fundamentals of Pediatric Rehabilitation .....	.5
*	PTA	209L	Fundamentals of Pediatric Rehabilitation Lab .....	.5
*	PTA	210	Neuro-Rehabilitation Techniques .....	2
*	PTA	210L	Neuro-Rehabilitation Techniques Lab .....	1
*	PTA	213	Orthotics and Prosthetics .....	.5
*	PTA	213L	Orthotics and Prosthetics Lab .....	.5
*	PTA	214	PTA Clinic 2 .....	3
*	LWA	206C	Occupational Wellness 3 .....	.5
			<b>Subtotal</b>	<b>9.5</b>

##### Semester 5 (Winter)

*	PTA	221	Clinical Seminar .....	2
*	PTA	224	PTA Clinic 3 .....	9
			<b>Subtotal</b>	<b>11</b>

Total Credits Required For Associates Degree (option A) 69/73

Total Credits Required For Associates Degree (option B) 69/70

#### Notations:

+ A "B" minimum grade is required in each course preceded by a plus sign ("+").

\* A "C" minimum grade is required in each asterisked course. ("\*")

#### % May be taken any time prior to completion of the program.

1. Acceptance into the PTA program occurs each Fall. Enrollment is determined by access to clinical agencies. Anticipated enrollment capacities can be found on the validation list. The procedures for application into the P.T.A. Program are in the guidelines for validation, which are in the Counseling Center and on Page ## of this catalog. You will be eligible to attempt to register for clinical courses only after successfully completing the prerequisite qualifications and receiving a "Semester and Year of Validation".
2. Prerequisite qualifications are: high school graduate or GED equivalent; provide transcripts from high school and all other colleges attended; be admitted to Delta College; completion with a B (3.0) minimum grade in: BIO 140, or BIO 152 and BIO 153, or BIO 240 and BIO 241; and completion with a "C" (2.0) minimum grade in ENG 111, HSC 105, PSY 101, and COM 114 to apply for validation.
3. An "accelerated track" is available for students who would like to complete the entire program, including the General Education courses, in five (5) semesters. All courses required for the "accelerated track" are listed under Option B.
4. Math skills of LEVEL 3 are recommended.
5. A PTA theme based ENG 113 Technical Communication must be taken while in the PTA program. If a non-PTA theme based ENG 113 is taken prior to entering the PTA program the student will need to also complete a PTA theme-based ENG 113 that will focus on writing skill/requirements within the PTA discipline.
6. Physical Therapist Assistant courses are offered day and evening hours and must be taken in the sequence shown. There may be occasional weekend courses, as well, that are mandatory.
7. You must achieve a minimum C (2.0) grade in each Physical Therapist Assistant course to be eligible to continue in the program.
8. In addition to tuition, fees, and textbook costs, you must purchase lab clothes and coats, clinic shoes, name tags, registration fees for

conferences and provide your transportation to clinical settings (plus possible hospital parking charges) and field trips.

9. Upon admission to the program, you must have a complete physical examination including a negative TB test or a physician's release form annually.
10. Current CPR for The Professional Rescuer certification is required for admission to the clinical sequence. Current CPR certification must be maintained throughout the program.
11. Proof of Hepatitis B vaccination or signed waiver is required for admission to clinical sequence.
12. An observation series is also required. Before you finish your prerequisites, you must observe two different PT's or PTA's performing their skills in two different offices for a minimum of 8 hours each. These observations must be documented on the Observation Form, which can be picked up in the Counseling Office. These forms must then be turned in to the Program Coordinator.
13. You need to be aware that clinical hospital assignments may be outside the Tri-county area.
14. Student Reentry Procedures are printed in the handbook given to all clinical students.
15. Criminal background checks are required to participate in clinical experiences. There is a fee for the criminal background check.
16. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
17. Delta College reserves the right to modify graduation requirements.
18. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

Also see "Dual Degrees."



# Practical Nurse

Career Pathway: Health Science



## Advanced Certificate

The PN program of study prepares you to function effectively as a member of the health care team under the direction of the RN and/or the physician. Upon successful completion of the program, you will receive an Advanced Certificate and are eligible to take the Practical Nursing licensure exam. The PN clinical coursework is an intense full-time three semesters (Fall, Winter, Spring/Summer) that require college-level reading, writing, and applied math skills. This program is approved by the Michigan Board of Nursing.

### Sem Hrs

You must have a combined GPA of 2.5 or higher in the following courses in order to qualify for validation.

#### Core Courses

*1,3	BIO 152	Human Anatomy & Physiology I .....	AND	4
*1,3	BIO 153	Human Anatomy & Physiology II .....		4
OR				
*1,3	BIO 240	Human Anatomy .....	AND	(4)
*1,3	BIO 241	Physiology .....		(4)
*3	ENG ---	Any Approved College Composition I Course .....		3/5
*3	MTH 117	Math for Allied Health or Math Competency Test .....		2/0
*3	HSC 105	Medical Terminology .....		2
*3	NUR 100A	Introduction to Nursing Careers (required for validation) .....		1
*3	PHM 285	Pharmacology for Health Care Professionals .....		3
Subtotal				17/21

Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application" and be officially validated. See validation procedures in this catalog for the required process.

#### Clinical Program Requirements

*	PNE 121	Fundamentals of Practical Nursing .....	AND	6
*	PNE 121L	Fundamentals of Practical Nursing Lab .....		3
*	PNE 122	Care of the Adult I .....	AND	6
*	PNE 122L	Care of Adult I Lab .....		3
*	PNE 123	Care of the Adult II .....	AND	2
*	PNE 123L	Care of Adult II Lab .....		2
*	PNE 124A	Pediatric Nursing Care .....	AND	1.8
*	PNE 124AL	Pediatric Nursing Lab .....		.7
*	PNE 124B	Maternal Nursing Care .....	AND	1.8
*	PNE 124BL	Maternal Nursing Care Lab .....		.7
Subtotal				27
Total Credits Required/certificate				44/48

### Notations:

\* A "C" minimum grade is required in each asterisked course.

- Students must have completed BIO 152 and BIO 153 or BIO 240 and BIO 241 within the past ten years. If this time period is exceeded, an approved biology course must be taken to refresh this content. Please see the nursing program coordinator to determine which course(s) must be taken.
- It is important that you check a semester ahead of time when you plan on validating for the nursing program to make sure course requirements have not changed. Updated information can be found through the nursing web page: [www.delta.edu/nursing](http://www.delta.edu/nursing), calling the Counseling Office (989-686-9330) or the Nursing Discipline Office (989-686-9500 or 989-686-9274).
- Prerequisite qualifications for validation are: (a) be admitted to Delta College, (b) provide transcripts reflecting high school diploma or GED, and all other colleges or training institutions attended, (c) completion of core courses with a grade of "C" or better and an overall GPA of 2.5 or greater for validation. Math competency exam is offered through the Assessment/Testing Office in D-101. All listed requirements must be completed for graduation. A minimum prerequisite of Reading Level 5 is required for validation.
- Due to the limited capacity of clinical facilities and the specific requirements of the accreditation agencies, this Program is considered a "limited enrollment" program. You will be eligible to attempt to register for clinical courses only after successfully completing the prerequisite qualifications and receiving a "Semester and Year of Validation" from the Records and Registration Office.
- The Nursing Student Handbook contains additional information, requirements and specific program policies that you are required to comply with while enrolled in the nursing program. See [www.delta.edu/nursing](http://www.delta.edu/nursing) Nursing Student Handbook. You must comply with all Nursing Program Policies.
- In addition to tuition and textbook costs, you must provide your own uniforms, clinic shoes, name tags and transportation to clinical agency settings, including possible parking charges. See [www.delta.edu/nursing](http://www.delta.edu/nursing) for program costs.
- First semester PNE nursing courses (PNE 121W & PNE 121LW) are offered each Fall Semester. With successful progression, the student will complete the program the following August. If a student graduates from the Delta PN program and would like to pursue the transition track of the ADN program, there are two options: One option is the PN graduate must pass the NCLEX-PN exam and work full time as a LPN for a minimum of one year; or if the PN student carries a GPA of 3.0 or higher throughout the PN program (including prerequisites) and has all pre-requisites for the ADN program completed, the PN graduate who is successful on their NCLEX-PN exam, may validate for the LPN to ADN Transition track and attempt registration for the next Transition entry class the following Winter. Refer to Nursing RN Transition Track for additional program information.
- Program-Entry Health Requirements: You must submit an up-to-date complete physical examination report to the Nursing Office prior to entrance into the first clinical course. As a clinical student, you are required to have a TB skin test completed annually. The physical examination must confirm that you are free from communicable disease and capable of performing all the duties necessary for the safe care of patients. A positive TB test will require a recent chest x-ray. Proof of Hepatitis B vaccine immunization must be submitted with the physical exam form or you must submit a signed waiver form. For persons born after 1957, documentation of immunization for MMR must be provided. Evidence of current (within ten years) Tetanus immunization status is required. You must submit all up-to-date health requirements to the Nursing Discipline Office prior to entrance into the first clinical course. CPR Training: You must have a CPR card, which must remain current throughout the clinical program. A photocopy of your certificate must be turned in to the Nursing Discipline Office prior to the start of classes. The CPR certification must include one and two person rescuer, child and infant rescuer, airway obstruction relief, and use of AED. Students with expired CPR certification, TB test, and/or physical exam will not be allowed to attend clinical.

9. Any student with a previous or current felony/misdemeanor conviction must inform the Nursing Program Coordinator of said conviction. Students should be aware that a felony/misdemeanor conviction may constitute grounds for ineligibility to sit for the Nursing Licensure examination. Students should be aware that the current licensure application form now requires that a criminal background check requiring fingerprinting be completed. Questions regarding licensure can be found at <http://www.michigan.gov/healthlicense> or be directed to the Michigan Board of Nursing at 517-335-0918.
10. All entering nursing students must be fingerprinted as part of health care agency requirements and for the Michigan Nursing Scholarship. Students will complete and sign a release form allowing Delta College Public Safety to complete a background check. Information about this process will be provided to the student at orientation. Results of the background check will be secured and kept confidential, but may be shared with clinical agencies when requested or as otherwise required by law. If results indicate a felony/misdemeanor conviction, the Nursing Program Coordinator will discuss the findings and the process with the student. A felony/misdemeanor conviction may delay or end the student's nursing education, delay graduation, or change the curriculum from which the student may graduate.
11. If a student in good standing (2.0 or better) or granted reentry into the program has a period of inactivity within a program track that exceeds three years, the student will need to revalidate for a program track and complete the entire clinical program.
12. A person can achieve PNE program completion if NUR/NPT 101A, NUR/NPT 101AL, NUR/NPT 101B, NUR/NPT 101BL, NUR/NPT 115, NUR/NPT 115L, NUR/NPT 116, NUR/NPT 116L, NUR/NPT 240, and NUR/NPT 240L are successfully completed.
13. Certificate Requirements: Earn a minimum of two-thirds of program credits or 24 credits at Delta College, whichever is less. Note that the nursing program handbook requires at least two semesters of the clinical program be taken at Delta College in order to graduate from the nursing program.
14. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
15. Delta College reserves the right to modify graduation requirements.



# Professional Studies In Office Administration

*Career Pathway: Business, Management,  
Marketing and Technology*



## Certificate of Achievement

The Professional Studies in Office Administration Certificate was created for the individual who is already employed in business and wants to apply new learning to the workplace. It provides the employed individual the opportunity to upgrade present office skills and acquire new competencies. This certificate offers a flexible academic framework for professional development through a "menu" approach to course selection.

### Sem Hrs

It is strongly suggested that students starting this certificate have an ability level equivalent to OAT 150 Business English, OAT 170 Keyboarding, and CST 103 Windows Foundations.

Choose 3-9 credits from each category.

### Category 1: Communications

*\$	COM 112	Fundamentals of Oral Communication .....	3
*\$	COM 114	Interpersonal Communication .....	3
*\$	COM 202	Oral Communication for Managers .....	3
*\$	CST 135	Help Desk Fundamentals .....	1
*\$	ENG 113	Technical Communication .....	3
*\$	ENG 195	Library Research Skills .....	OR 2
*\$	LIB 195	Library Research Skills .....	(2)
*\$	MGT 145	Principles of Sales .....	3
*\$	OAT 151	Business Communication I .....	3
*\$	OAT 152	Business Communication II .....	3
*\$	PHL 203	Business Ethics .....	3
*\$	PHL 210	Information Technology Ethics & Law .....	2
*\$	PSY 101	Applied Psychology .....	3
Subtotal			3/9

### Category 2: Office/Management

*\$	ACC 111	Introductory Accounting .....	OR 4
*\$	ACC 211	Principles of Accounting I .....	(4)
*\$	ACC 212	Principles of Accounting II .....	4
*\$	ACC 233	Cost Accounting .....	3
*\$	ENT 131	Entrepreneurship/Small Business Management I .....	3
*\$	MGT 110	Business Mathematics .....	3
*\$	MGT 153	Introduction to Business .....	3
*\$	MGT 245	Principles of Management .....	3
*\$	MGT 265	International Business .....	3
*\$	OAT 105	Time Management .....	1
*\$	OAT 155	Editing .....	2
*\$	OAT 157	File Management .....	2
*\$	OAT 175	Electronic Calculation .....	2
*\$	OAT 268	Administrative Office Practices .....	3
Subtotal			3/9

### Category 3: Technology

*\$	CST 104	Microsoft Word Foundations .....	1
*\$	CST 105	Outlook .....	1
*\$	CST 106	Internet Foundations .....	1
*\$	CST 107	Microsoft Publisher .....	1
*\$	CST 110	Web Page Development Using HTML .....	1
*\$	CST 123	Windows Operating System .....	1
*\$	CST 134	Micro Computers in Business Using MS Office .....	3
*\$	CST 146	Desktop Publishing .....	2
*\$	CST 147	Presentation Graphics Using PowerPoint .....	2
*\$	CST 151	Spreadsheet Fundamentals .....	OR 2
*\$	CST 155	Microsoft Excel .....	(3)
*\$	CST 204	Microsoft Word: Intermediate .....	2
*\$	CST 210	Advanced Web Page Development .....	2
*\$	CST 257	Database MS Access .....	3
*\$	MGT 274	Computer Aided Decisions .....	2

*\$	OAT 171	Document Processing: Beginning .....	3
*\$	OAT 172	Document Processing: Intermediate .....	3
*\$	OAT 273	Document Processing: Advanced .....	3
*\$	OAT 285	Office Technology .....	3
Subtotal			3/9
Total Credits Required			18

### Notations:

\* A "C" minimum grade is required in each asterisked course.

**\$ All courses on this certificate must be successfully completed within 4 years of graduation.**

- Many classes have prerequisites. Check the current Delta College catalog or consult with the Counseling & Advising Center for the proper sequencing of courses.
- If you are interested in completing other certificates or degrees at Delta College, consult with the Counseling & Advising Center for help with your course selection.
- It is strongly suggested that students starting this certificate have an ability level equivalent to OAT 150 Business English, OAT 170 Keyboarding, and CST 103 Windows Foundations.
- File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
- Delta College reserves the right to modify graduation requirements.

## Quality Assurance

*Career Pathway: Business, Management,  
Marketing and Technology*



### Certificate of Achievement

Quality professionals work within the quality assurance function to ensure that customer requirements are met. They work with measurements, statistics, and other elements within the quality assurance system. Problem solving and verification activities are also an important function of the quality professional's responsibility. Information and skills are needed by today's quality professional to ensure the quality function is being performed correctly. This certificate is designed to ensure that quality professionals in various businesses and industries acquire the information and skills needed to be effective.

Sem Hrs

#### Basic Program Requirements

* MTH 208	Elementary Statistics.....	3
* QA 110	Quality Problem Solving Tools.....	1
* QA 120	Quality & Productivity Mgmt. ....	2
* QA 124	Quality Systems I.....	3
* QA 126	Quality Systems II.....	3
* QA 131	Quality Auditing.....	2
* QA 140	Measurement Systems.....	3
* QA 191	Quality Teamwork.....	1
* QA 244	Statistical Process Control.....	3
Subtotal		21

Total Credits Required For Certificate 21

#### Notations:

\* A "C" minimum grade is required in each asterisked course.

1. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
2. Delta College reserves the right to modify graduation requirements.

## Quality Management

*Career Pathway: Business, Management,  
Marketing and Technology*



### Certificate of Achievement

Upon completion of the Quality Management Certificate, you will have the knowledge and skills necessary to effectively plan and implement an internal quality system. In today's competitive business environment, a system to ensure that the customer's needs are identified and requirements are met is a business function. Quality Assurance professionals must maintain an effective quality system no matter what business, industry, organization or governmental body they work for. This certificate is designed for those people working in various fields and occupations who are responsible for the management of the quality assurance function.

Sem Hrs

#### Basic Program Requirements

* QA 120	Quality & Productivity Mgmt. ....	2
* QA 124	Quality Systems I.....	3
* QA 126	Quality Systems II.....	3
* QA 131	Quality Auditing.....	2
* QA 191	Quality Teamwork.....	1
Subtotal		11

Total Credits Required For Certificate 11

#### Notations:

\* A "C" minimum grade is required in each asterisked course.

1. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
2. Delta College reserves the right to modify graduation requirements.



# Radiography

Career Pathway: Health Science



## Associate in Applied Science Degree

Working under the supervision of a physician, Radiographers (also called Radiologic Technologists) assist in patient care and diagnosis through the use of x-ray equipment to take images of the internal structures of a patient's body. Radiographers position the patient; provide appropriate patient care; determine and set exposure factors; expose and process the required number of radiographs; prepare and help administer chemical mixtures called contrast media; assist in fluoroscopic examinations; and use radiation protection devices and techniques. Upon successfully completing this program, you are eligible to take the national certification examination administered by the American Registry of Radiologic Technologists. This program is accredited by the Joint Review Committee on Education in Radiologic Technology.

	Sem	Hrs	
<b>General Education Courses</b>			
+3,5 BIO 140	Essentials Of Human Anatomy & Physiology .....	5	
	OR		
+3,5 BIO 152	Human Anatomy & Physiology I .....	AND (4)	
+3,5 BIO 153	Human Anatomy & Physiology II .....	(4)	
	OR		
+3,5 BIO 240	Human Anatomy .....	AND (4)	
+3,5 BIO 241	Physiology .....	(4)	
*3 CST 103	Windows Foundations .....	1	
	OR		
*3 CST 133	Computer Concepts & Competencies .....	(4)	
*3 ENG ---	Any Approved College Composition I Course .....	3/5	
*3 ENG ---	Any Approved College Composition II Course .....	3/5	
	OR		
*3 ENG 113	Technical Communication .....	(3)	
*3 HSC 105	Medical Terminology .....	2	
*3 POL ---	Any Approved American Government Requirement .....	3/4	
*3 PSY 101	Applied Psychology .....	3	
	OR		
*3 PSY 211	General Psychology .....	(4)	
	Subtotal	20/32	

Prior to attempting to register to begin the clinical sequence, you must complete the above courses and the Validation Application and be officially validated. See Validation procedures in this catalog for required process.

### Clinical Course Sequence:

<b>First Semester (Fall)</b>			
* RAD 100	Basic Science of Medical Imaging .....	2	
* RAD 104	Introduction to Medical Imaging .....	2	
* RAD 105	Fundamentals of Radiography .....	3	
* RAD 108	Patient Care and Management .....	2	
* RAD 110	Principles of Radiographic Exposure .....	2	
* LW 206A	Occupational Wellness 1 .....	1	
	Subtotal	12	

### Second Semester (Winter)

* RAD 120	Principles of Radiation Biology and Protection .....	2	
* RAD 130	Radiographic Procedures 1 .....	2	
* RAD 135	Clinical Education 1 .....	6	
* RAD 140	Clinical Seminar 1 .....	1	
* LWA 206B	Occupational Wellness 2 .....	.5	
* LWA 206C	Occupational Wellness 3 .....	.5	
	Subtotal	12	

### Third Semester (Spring)

* RAD 150	Radiographic Procedures 2 .....	2	
* RAD 160	Clinical Education 2 .....	7	
* RAD 165	Clinical Seminar 2 .....	1	
	Subtotal	10	

### Fourth Semester (Fall)

* RAD 205	Pharmacology in Imaging .....	1	
* RAD 210	Pathology in Radiography .....	1	
* RAD 212	Advanced Imaging Equipment .....	1	
* RAD 215	Radiographic Procedures 3 .....	2	
* RAD 220	Clinical Education 3 .....	7	
* RAD 225	Clinical Seminar 3 .....	1	
	Subtotal	13	

### Fifth Semester (Winter)

* RAD 230	Quality Improvement in Imaging .....	1	
* RAD 235	Radiographic Procedures 4 .....	2	
* RAD 245	Clinical Education 4 .....	7	
* RAD 258	Radiography Capstone Seminar .....	2	
	Subtotal	12	

### Sixth Semester (Spring)

* RAD 260	Clinical Education 5 .....	5	
* RAD 264	Cross Sectional Imaging .....	1	
	Subtotal	6	

Total Credits Required For Associate Degree 85/97

### Notations:

\* A "C" minimum grade is required in each asterisked course.

+ A "B" minimum grade is required in each course preceded by a plus sign ("+").

- Approximately 18 students will be accepted each Fall Semester for Radiography courses. After successfully completing the pre-requisites qualifications and submitting a "Validation Application for Health Clinical Programs," you will be eligible to register. See Validation procedures in this catalog for required process.
- Program qualifications include: (a) high school graduate or GED equivalent; (b) be admitted to Delta College; (c) provide transcripts from high school and all other colleges attended.
- Validation requirements: (a) LEVEL 5 Reading Competency; (b) LEVEL 4 Math Competency. Math courses are to have been taken within the last five years. (c) Successful completion of each of the prerequisite courses as noted. (d) A required meeting with the program coordinator to provide the student an orientation related to the field of radiology, which may involve being required to go to an area healthcare facility.
- Other program requirements: (a) Current CPR certification (for the Professional Rescuer) is required for admission to the clinical sequence. CPR currency must be maintained throughout the program. (b) Submit a completed Health Appraisal Form which requires a negative TB test. (c) Submit evidence of Hepatitis B immunization OR signed waiver form provided during orientation.
- If you are anticipating pursuing a Baccalaureate Degree, BIO 152 and BIO 153 are required for most transfer programs.
- Radiography Program courses are offered day and evening hours and must be taken together in the sequence shown. Clinical Education courses are conducted primarily during daytime hours; however, off-shifts (second and third shifts) may be assigned to meet course objectives.
- You must achieve a "C" (2.0) minimum grade in each Radiography course to be eligible to continue in and graduate from the Program.

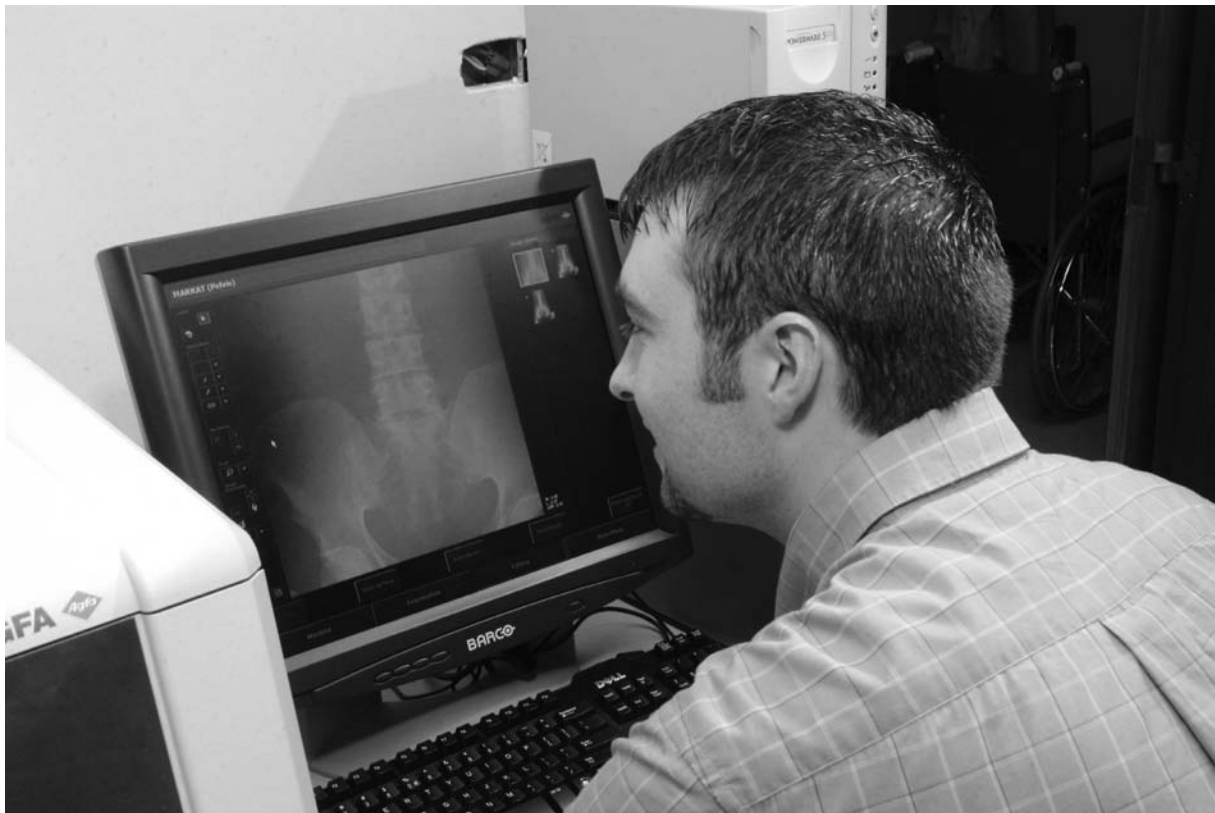
You must comply with all Radiography Program Progression and Retention Policies (copies available from the Health Programs counselor or program faculty.)

8. In addition to tuition, fees, and textbook costs, you must purchase uniforms, nametags, and clinic shoes; provide your transportation to clinic settings; pay for meals, parking fees, and any medical treatment that may become necessary.
9. Any student with a previous or current felony or misdemeanor conviction must inform the Radiography Program Coordinator and/or Radiography counselor of said conviction. Students should be aware that a felony or misdemeanor conviction may constitute grounds for ineligibility to sit for the American Registry of Radiologic Technologists national certifying examination. Students should be aware that the current ARRT application form requests

that the following information be reported: Conviction of a felony or misdemeanor; Misdemeanor speeding convictions related to alcohol or drug use; Pleas of guilty; Plea of nolo contendere; Withheld adjudication; Suspended sentence; Military court-martial. Questions may be directed to the American Registry of Radiologic Technologists, (651) 687-0048, or [www.arrt.org](http://www.arrt.org).

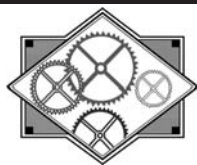
10. Agency contracts with health care institutions may prohibit students with felony or misdemeanors to enter the facility and thus possibly prohibit course completion and progression in the program.
11. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
12. Delta College reserves the right to modify graduation requirements.
13. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

See also "Dual Degrees."



# Refrigeration, Heating, Air Conditioning Service Technology

Career Pathway: Engineering/Manufacturing and Industrial Technology



## Options:

**Air Conditioning**  
**Commercial Refrigeration**  
**Heating**

## Associate in Applied Science Degree/ Advanced Certificate

This program will provide you education and skill training for service technicians in the Refrigeration, Heating, and Air Conditioning Service Industry. Technicians on the job are needed to test, troubleshoot, repair, install, and sell the wide range of mechanical and electrical appliances and components in this field.

### Sem Hrs

#### YEAR ONE - Fall Semester

2,3,4,5	ENG ---	Any Approved College Composition I Course.....	3/5
2,5	RHA 135	Heating System Fundamentals.....	3
2,3,4,5	RHA 140	Applied Electricity I.....	3
2,4,5	RHA 142	Sheetmetal Layout I.....	3
Subtotal			12/14

#### YEAR ONE - Winter Semester

2	ENG 113	Technical Communication.....	3
2	LW ---	Any 1 Credit LW Course (As of fall 2007).....	1
2	MTH ---	Any Approved Intermediate Algebra Course.....	4
2,3,4	RHA 121	Fundamentals of Refrigeration & A/C.....	3
2,3,4	RHA 126	Refrigerant Piping & Practices.....	3
Subtotal			14

#### YEAR ONE - Spring/Summer Semester

2,3,4	RHA 122	Refrigeration & A/C Service I.....	3
2,4	RHA 146	Residential Air Conditioning Systems.....	3
\$,2,5	RHA 136	Heating Service Fundamentals.....	3
3,4,6	RHA 124	Refrigeration & A/C Service II.....	3
Subtotal			12

#### YEAR TWO - Fall Semester

*1,2,3,4,5	ACE 285	Internship: Design Technology.....	1
2	COM 112	Fundamentals of Oral Communication.....	3
2	CST 133	Computer Concepts & Competencies.....	4
<b>OR</b>			
2	CST 134	Micro Computers in Business Using MS Office.....	(3)
2,3	RHA 123	Commercial Refrigeration Flow Controls I.....	3
\$,2,3,4	RHA 150	Refrigerant Certification.....	1
\$,2,4	RHA 210	Commercial Air Conditioning.....	3
Subtotal			14/15

#### YEAR TWO - Winter Semester

2	LWA ---	Any 1 Credit LWA Course.....	1
2	POL ---	Any Approved American Government Requirement.....	3/4
2,3	RHA 225	Commercial Refrigeration II.....	3
\$,2,3,4,5	RHA 230	Design of HVAC Systems.....	5
Subtotal			12/13

#### YEAR TWO - Spring/Summer Semester

\$,2,3	RHA 233	Commercial Refrigeration III.....	5
\$,2,5	RHA 235	Hydronic and Oil Heating Fundamentals.....	3
Subtotal			8

Total Credits Required For Commerical Refrigeration Advanced Certificate.....			36/38
Total Credits Required For Air Conditioning Advanced Certificate.....			34/36
Total Credits Required For Heating Advanced Certificate.....			24/26
Total Credits Required For Associate Degree.....			69/73

0

## Notations:

\* A "C" (2.0) minimum grade is required in each asterisked course.

**\$ Key Course:** Key courses must be completed within 5 years of completing certificate or degree. Failure to complete within the stated time frame will require you to repeat this course. See section 4 of the College Catalog "Academic Policies/Graduation Requirements."

1. In a ladder program, ACE 285 is only required to be taken one time.
2. Required for the Associates Degree.
3. Required for the Commercial Refrigeration Advanced Certificate.
4. Required for the Air Conditioning Advanced Certificate.
5. Required for the Heating Advanced Certificate.
6. Only required for certificate programs.
7. Prior to enrollment, you must have an ASSET score of 38 (Elementary Algebra), 31 (Intermediate Algebra), or 28 (College Algebra) or an ACT score of 19 in Math, or COMPASS score of 41 (Algebra). You are advised to take MTH 097 if your algebra skills are weak.
8. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
9. Delta College reserves the right to modify graduation requirements.
10. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



## Residential Construction

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



### Associate in Applied Science Degree/ Advanced Certificate

The Certificate Program is designed to prepare you for jobs in rough carpentry and house framing with the skills you have learned in such areas as: job specifications and drawings, building materials, use of woodworking the surveying tools, cost estimations, concrete work, and exterior finishing. Completion of this program preempts years of apprenticeship in the construction field. You may become self-employed or find employment with a contractor or in a building supply center.

In addition to skills gained from courses completed in the Residential Construction Certificate Program, students completing the Associate degree will have learned construction techniques in interior trim, cabinet making and installation, equipment installation, and interior finishing. The Program also offers the breadth of education necessary for a successful self-employed business or lumberyard management and has the support of the home builders association.

		Sem Hrs
<b>General Education Courses</b>		
MTH 097	Algebra I .....	0
	<b>OR</b>	
	Demonstrate an acceptable score on the current College assessment instrument .....	
ENG ---	Any Approved College Composition I Course .....	3/5
2 ENG ---	Any Approved College Composition II Course .....	3/5
	<b>OR</b>	
2 ENG 113	Technical Communication .....	(3)
LW ---	Any 1 Credit LW Course (As of fall 2007) .....	1
	<b>AND</b>	
LWA ---	Any 1 Credit LWA Course .....	1
	<b>OR</b>	
LW ---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
POL ---	Any Approved American Government Requirement .....	3/4
PSY 101	Applied Psychology .....	3
	<b>OR</b>	
PSY 211	General Psychology .....	(4)
	<b>Subtotal</b>	<b>14/20</b>
<b>Basic Program Requirements</b>		
>* RC 101	Construction Print Interpretation .....	3
* ARC 101	Materials and Methods of Construction .....	3
>* RC 104	Construction Lab .....	3
* ARC 221	Site Preparation .....	3
>* RC 106	Concrete and Foundations .....	3
>* RC 108	Construction Safety .....	2
* ARC 105	Architectural Drafting I .....	4
>* RC 114	Framing Square .....	4
>* RC 200	Construction Contracting Rules and Regulations .....	3
>*3 RC 201	Rough and Outside Framing .....	4
* ARC 204	Estimating Building Construction .....	3
>* RC 203	Residential CAD .....	2
>*3 RC 204	Inside Finishing and Hardware .....	4
* RC 205	Cabinet Making and Millwork .....	5
* ARC 111	Mechanical and Electrical Systems for Buildings .....	3
* ARC 211	Elements of Structural Design .....	2
>* ARC 251	History of Architecture .....	2
	<b>OR</b>	
>* ART 251	History of Architecture .....	(2)
>1* ACE 285	Internship: Design Technology .....	1
	<b>Subtotal</b>	<b>54</b>
	<b>Total Credits Required For Certificate</b>	<b>31</b>
	<b>Total Credits Required For Associate Degree</b>	<b>68/74</b>

### Notations:

> A Certificate will be awarded when courses preceded by a greater than (">") sign are successfully completed.

\* A "C" minimum grade is required in each asterisked course.

1. In a ladder program, ACE 285 is only required to be taken one time.
2. Students planning to transfer should take any approved College Composition II requirement.
3. RC 201 Rough and Outside Framing (Fall semester), and RC 204 Inside Finishing and Hardware (Winter semester) are to be taken in sequence in the same academic year.
4. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
5. Delta College reserves the right to modify graduation requirements.
6. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



# Respiratory Care

Career Pathway: Health Science



## Associate in Applied Science Degree

Respiratory Therapists in Michigan are licensed health care providers. In order to be licensed you must earn a minimum of an Associate degree and successfully complete National exams. As a Respiratory Therapist you will be qualified to assume primary clinical responsibility for all respiratory care modalities, including responsibilities involved in the supervision of certified respiratory technician functions. The registered therapist is also capable of serving as a resource person to the physician with regard to current practices in respiratory care and to the hospital staff regarding effective and safe methods for administering respiratory care. Respiratory Therapists who have a certificate of completion from an AMA-approved therapist training program, a minimum of 62 college credits, and six months of experience following completion of the program are eligible to apply for registration by the National Board for Respiratory Care (NBRC). The process consists of two written exams and clinical simulation. Applicants must pass all three to be awarded the Registered Respiratory Therapist (RRT) credential. This is a suggested enrollment sequence for full-time students. It is suggested that part-time students see an advisor for scheduling assistance.

### Sem Hrs

For the following General Education courses Section I must be successfully completed ("C" or better except for BIO 140 which must be completed with a "B" or better) to qualify for validation. It is strongly recommended that Section II courses be completed prior to the clinical experience. ALL courses in Section I and II are required for the Associate Degree.

#### General Education Courses - Section I

+2	BIO	140	Essentials Of Human Anatomy & Physiology .....	5
OR				
*2	BIO	152	Human Anatomy & Physiology I .....	AND (4)
*2	BIO	153	Human Anatomy & Physiology II .....	(4)
OR				
*2	BIO	240	Human Anatomy .....	AND (4)
*2	BIO	241	Physiology .....	(4)
*2	HSC	105	Medical Terminology .....	2
*2	RT	100	Basic Sciences for Respiratory Care .....	2

#### General Education Courses - Section II

*	ENG	---	Any Approved College Composition I Course .....	3/5
*	ENG	---	Any Approved College Composition II Course .....	3/5
*	LW	---	Any 1 Credit LW Course (As of fall 2007) .....	1
AND				
*	LWA	---	Any 1 Credit LWA Course .....	1
OR				
*	LW	---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
*	POL	---	Any Approved American Government Requirement .....	3/4
*	PHL	215	Health Care Ethics .....	3
OR				
*	PSY	101	Applied Psychology .....	(3)
OR				
*	PSY	211	General Psychology .....	(4)
OR				
*	SOC	211	Principles of Sociology .....	(3)
OR				
*	COM	112	Fundamentals of Oral Communication .....	(3)
Subtotal				23/32

#### Clinical Course Sequence

##### First Semester (Fall)

*	RT	117	Basic Respiratory Care I .....	3
*	RT	118	Basic Respiratory Care II .....	3
*	RT	121	Orientation to RC as a Profession .....	2
*	RT	126	Clinical Education I .....	3
*	RT	131	Artificial Airway Care and Manual Ventilation .....	2
Subtotal				13

##### Second Semester (Winter)

*	RT	132	Adult Ventilatory Care .....	3
*	RT	135	Diagnostics and Special Procedures .....	4
*	RT	146	Clinical Education II .....	6
*	RT	149	Clinical Education 2 Seminar .....	1
Subtotal				14

##### Third Semester (Spring)

*	RT	150	Cardiovascular Evaluation and Monitoring .....	3
Subtotal				3

##### Fourth Semester (Fall)

*	RT	207	Cardiopulmonary Pathophysiology .....	3
*	RT	211	Advanced Cardiopulmonary Physiology .....	3
*	RT	212	Advanced Ventilator Management .....	2
*	RT	214	Seminar I .....	1
*	RT	216	Rehabilitation and Home Care .....	1
*	RT	226	Clinical Education III .....	6
*	RT	229	Clinical Education 3 Seminar .....	1
Subtotal				17

##### Fifth Semester (Winter)

*	RT	231	Maternal and Neonatal Respiratory Care .....	2
*	RT	234	Seminar II .....	1
*	RT	240	Advanced Respiratory Care Pharmacology .....	3
*	RT	244	Optional Rotation/Special Project .....	1
*	RT	246	Comprehensive Clinical Education .....	8
Subtotal				15

Total Credits Required For Associate Degree 85/94

#### Notations:

\* A "C" or better is required in each asterisked course.

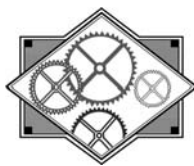
+ A "B" minimum grade is required in each course preceded by a plus sign ("+").

1. A maximum of 15 students will be accepted each Fall Semester for Respiratory Care courses from qualified students who have been assigned a "semester and year of validation." You will be placed on this list only after successfully completing the prerequisite qualifications and submitting a "Validation Application for Health Clinical Program" to the Registrar's Office. See Validation Procedures in this section for required procedures.
2. Prerequisite qualifications are: (a) high school graduate or GED equivalent; (b) be admitted to Delta College; (c) provide transcripts from high school and all other colleges attended; and (d) completion of Section I courses as indicated.
3. RT 100 has a prerequisite math requirement that Algebra must have been taken within the past 5 years.
4. After you receive notification of acceptance for the Fall Semester, you must have a complete physical examination including a negative TB test.
5. RT courses are offered day hours only and generally must be taken together in the sequence shown. You must achieve a minimum "C" (2.0) grade in each RT course to be eligible to continue in the Program.
6. In addition to tuition and textbook costs, you must purchase a laboratory coat, protective eye wear, name tag, provide your own transportation to clinical settings (plus possible hospital parking charges), and purchase three Self-Assessment Exams (total cost approximately \$150) during the final semester in the Program.
7. Admission to and continuance in the Program is contingent upon your compliance with all policies contained in the Respiratory Care Student handbook. Reentry into the program is outlined in the handbook and is based on available seating within the program.
8. If you have prior respiratory therapy work experience, you may be eligible to waive or receive equivalent credit for some RT courses.
9. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
10. Delta College reserves the right to modify graduation requirements.
11. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

Also see "Dual Degrees."

## Skilled Trades (Apprenticeship)

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



### Options:

Agriculture Maintenance Certificate  
Carpenter (Building Trades)  
Electrician (Industrial)  
Jobbing Molder  
Machine Builder  
Machine Repair  
Millwright  
Pattern Maker  
Pipefitter (Industrial Maintenance)  
Plumber-Pipefitter  
Pre-apprentice Skilled Trades Construction Certificate  
Pre-apprentice Skilled Trades Electrical Certificate  
Pre-apprentice Skilled Trades Mechanical Certificate  
Stationary Boiler Engineering  
Tinsmith  
Tool Hardener  
Tool/Die Maker

### Associate in Applied Science Degree/Advanced Certificate/ Certificate of Achievement

As an apprentice, you may apply your related training towards an Associate in Applied Science Degree. In addition to the degree requirements listed below, the following requirements must also be met. 1. Successful completion of all courses listed in a specific related training program (32-40 credits). 2. Successful completion of appropriate supportive study elective courses. Supportive electives are courses taken to fit your individual needs. Prior academic course work may be acceptable. Assistance in selecting electives is available from a Delta College counselor familiar with technical career programs. 3. Receipt of a journeyman card or equivalent trade experience.

			Sem Hrs
<b>General Education Courses</b>			
ENG	---	Any Approved College Composition I Course .....	AND 3/5
ENG	---	Any Approved College Composition II Course .....	3/5
		OR	
ENG	113	Technical Communication .....	(3)
		OR	
OAT	151	Business Communication I .....	AND (3)
OAT	152	Business Communication II .....	(3)
LW	---	Any 1 Credit LW Course (As of fall 2007) .....	1
		AND	
LWA	---	Any 1 Credit LWA Course .....	1
		OR	
LW	---	Any 2 Credit LW Course (As of fall 2007) .....	(2)
POL	---	Any Approved American Government Requirement .....	3/4
#	---	Suggested Electives .....	9/18
		Subtotal	17/34

### Related Training Options:

(See the following for listing of specific courses for each program)

Carpenter (Building Trades) .....	37
Electrician (Industrial) .....	40
Jobbing Molder .....	40
Machine Builder .....	39
Machine Repair .....	38
Millwright .....	35
Pattern Maker .....	43
Pipe fitter (Industrial Maintenance) .....	34
Plumber - Pipefitter .....	40
Stationary Boiler Engineering .....	40
Tinsmith .....	35
Tool/Die Maker .....	41
Tool Hardener .....	35

Total Credits Required For Associate Degree 62/63

### # Suggested Supportive Electives

Economics Courses (ECN) .....	
General Management Courses (MGT) .....	
Manufacturing and Industrial Technology Courses (MIT) .....	
Mechanical Technology Courses (MT) .....	
Psychology Courses (PSY) .....	

### Apprenticeship Trade Related Instruction Programs

Delta College offers required Trade Related Instruction Programs for apprentices and up-graders in the industrial trades, building trades, and maintenance trades from the tri-county and surrounding areas. Trade Related Instruction Programs are designed with the cooperation of industry and provide the instruction to strengthen the theoretical knowledge in each trade area. The combination of related instruction and on-the-job experience is essential in order to provide a complete program to train skilled personnel for the trades. Courses are offered during the evening only. The scheduling and registration for courses is the responsibility of the Skilled Trades Department; therefore, any inquiry about a particular class should be made directly to them by phoning (989) 686-9476 or 686-9530.

Since many company apprenticeship programs are registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, it is imperative that the registration of these courses be coordinated by the local plant apprenticeship coordinator and the College Skilled Trades Department. All Trade Related Instruction is subject to change per agreement with the participating employer and Delta College. Delta College does not issue a journeyman's card only a completion certificate.

The following programs are representative of typical Trade Related Instruction Programs Delta College offers in conjunction with area employers. Employers, however, are not restricted to just these programs and many elect to modify our programs to meet their specific needs. Employers desiring more information on Delta's Trade Related Instruction Programs should call the Skilled Trades Program Manager at (989) 686-9530 or 686-9476.

### Carpenter (Building Trades)

ARC	204	Estimating Building Construction .....	3
SKCT	102	Building Materials .....	3
SKCT	105	Building Site Surveying .....	3
SKCT	106	Concrete and Foundations .....	3
SKCT	111	Construction Print Interpretation .....	3
SKCT	114	Framing Square .....	4
SKCT	201	Rough and Outside Framing .....	4
SKCT	204	Inside Finishing and Hardware .....	4
SKCT	205	Cabinet Making and Millwork .....	5
SKMT	161	Industrial Rigging and Safety .....	2
SKWL	103	Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting ...	3
		Total	37

### Electrician (Industrial)

SKMA	111	Applied Integrated Electrical Math I .....	6
SKMA	112	Applied Integrated Electrical Mathematics II .....	3
SKMA	113	Applied Integrated Electrical Math III .....	3
SKEL	111	Conventional Controls .....	3
SKEL	101	Basic Electronics .....	6
SKEL	102	Industrial Electronics .....	4
SKEL	131	AC/DC Machinery .....	3
SKEL	121	Advanced Controls I .....	5
SKEL	122	Advanced Controls II .....	4
SKEL	141	Industrial Electrical Codes & Standards .....	3
		Total	40

### Pre-Apprentice Skilled Trades Electrical Certificate

>1	ENG	---	ENG 108 or higher .....	3/5
>	SKMA	111	Applied Integrated Electrical Math I .....	6
>	SKMA	112	Applied Integrated Electrical Mathematics II .....	3
>	SKMA	113	Applied Integrated Electrical Math III .....	3
>	SKEL	111	Conventional Controls .....	3
>	SKEL	101	Basic Electronics .....	6
			Subtotal	24/26

**Jobbing Molder**

SKCN 162	Computer Numerical Control Theory .....	4
SKCN 216	CNC with Machining Applications .....	4
SKDR 101	Sketching and Blueprint Reading .....	4
SKDR 111	Drawing II .....	3
SKDR 131	Pattern Design I .....	3
SKMA 103	Applied Geometry and Trigonometry .....	4
SKMT 111	Metals .....	3
SKMT 231	Fundamentals of Foundry Technology .....	3
SKPH 101	Applied Physics .....	4
SKTR 181	Machine Tool I .....	2
SKTR 182	Machine Tool Lab II .....	3
SKTR 183	Machinery Handbook .....	3
Total		40

**Also see Lineworker/Electrical Utilities program in this section****Machine Builder**

SKDR 101	Sketching and Blueprint Reading .....	4
SKMA 103	Applied Geometry and Trigonometry .....	4
SKMT 101	Hydraulics and Pneumatics I .....	3
SKMT 102	Hydraulics and Pneumatics II .....	3
SKMT 151	Power Transmission .....	3
SKMT 161	Industrial Rigging and Safety .....	2
SKOT 191	Machine Controls I .....	3
SKOT 192	Machine Controls II .....	3
SKPT 106	Pipefitters Handbook .....	3
SKTR 181	Machine Tool I .....	2
SKTR 183	Machinery Handbook .....	3
SKWL 103	Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting .....	3
SKWL 104	Introduction to Shielded Metal Arc Welding .....	3
Total		39

**Machine Repair**

SKCN 162	Computer Numerical Control Theory .....	4
SKDR 101	Sketching and Blueprint Reading .....	4
SKDR 111	Drawing II .....	3
SKMA 103	Applied Geometry and Trigonometry .....	4
SKMT 101	Hydraulics and Pneumatics I .....	3
SKMT 102	Hydraulics and Pneumatics II .....	3
SKMT 111	Metals .....	3
SKMT 161	Industrial Rigging and Safety .....	2
SKPH 101	Applied Physics .....	4
SKTR 181	Machine Tool I .....	2
SKTR 182	Machine Tool Lab II .....	3
SKTR 183	Machinery Handbook .....	3
Total		38

**Millwright**

SKCT 101	Industrial Millwright Procedures .....	3
SKDR 101	Sketching and Blueprint Reading .....	4
SKMA 103	Applied Geometry and Trigonometry .....	4
SKMT 101	Hydraulics and Pneumatics I .....	3
SKMT 102	Hydraulics and Pneumatics II .....	3
SKMT 151	Power Transmission .....	3
SKMT 161	Industrial Rigging and Safety .....	2
SKMT 171	Sheetmetal Layout I .....	3
SKPH 101	Applied Physics .....	4
SKWL 103	Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting .....	3
SKWL 104	Introduction to Shielded Metal Arc Welding .....	3
Total		35

**Pattern Maker**

SKCN 162	Computer Numerical Control Theory .....	4
SKCN 216	CNC with Machining Applications .....	4
SKDR 101	Sketching and Blueprint Reading .....	4
SKDR 111	Drawing II .....	3
SKDR 121	Descriptive Geometry .....	3
SKDR 131	Pattern Design I .....	3
SKMA 103	Applied Geometry and Trigonometry .....	4
SKMT 111	Metals .....	3
SKMT 231	Fundamentals of Foundry Technology .....	3
SKPH 101	Applied Physics .....	4
SKTR 181	Machine Tool I .....	2
SKTR 182	Machine Tool Lab II .....	3
SKTR 183	Machinery Handbook .....	3
Total		43

**Pipefitter (Industrial Maintenance)**

SKDR 101	Sketching and Blueprint Reading .....	4
SKDR 141	Pipe and Tube Isometrics .....	3
SKMA 103	Applied Geometry and Trigonometry .....	4
SKMT 101	Hydraulics and Pneumatics I .....	3
SKMT 102	Hydraulics and Pneumatics II .....	3
SKPH 101	Applied Physics .....	4
SKPT 101	Industrial Piping .....	4
SKPT 106	Pipefitters Handbook .....	3
SKPT 121	Fundamentals of Refrigeration & A/C .....	3
SKWL 103	Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting .....	3
Total		34

**Plumber-Pipefitter**

SKDR 101	Sketching and Blueprint Reading .....	4
SKDR 141	Pipe and Tube Isometrics .....	3
SKMA 103	Applied Geometry and Trigonometry .....	4
SKMT 101	Hydraulics and Pneumatics I .....	3
SKMT 102	Hydraulics and Pneumatics II .....	3
SKMT 171	Sheetmetal Layout I .....	3
SKPH 101	Applied Physics .....	4
SKPT 101	Industrial Piping .....	4
SKPT 106	Pipefitters Handbook .....	3
SKPT 121	Fundamentals of Refrigeration & A/C .....	3
SKWL 103	Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting .....	3
SKWL 104	Introduction to Shielded Metal Arc Welding .....	3
Total		40

**Stationary Boiler Engineering**

SKDR 101	Sketching and Blueprint Reading .....	4
SKDR 141	Pipe and Tube Isometrics .....	3
SKMA 103	Applied Geometry and Trigonometry .....	4
SKMT 101	Hydraulics and Pneumatics I .....	3
SKMT 102	Hydraulics and Pneumatics II .....	3
SKMT 161	Industrial Rigging and Safety .....	2
SKPT 106	Pipefitters Handbook .....	3
SKPT 111	Stationary Boiler Engineering I .....	2
SKPT 112	Stationary Boiler Engineering II .....	2
SKPT 113	Stationary Boiler Engineering III .....	2
SKPT 114	Stationary Boiler Engineering IV .....	3
SKPT 121	Fundamentals of Refrigeration & A/C .....	3
SKWL 103	Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting .....	3
SKWL 104	Introduction to Shielded Metal Arc Welding .....	3
Total		40

<b>Tinsmith</b>				
SKDR	101	Sketching and Blueprint Reading .....	4	
SKDR	121	Descriptive Geometry .....	3	
SKMA	103	Applied Geometry and Trigonometry .....	4	
SKMT	161	Industrial Rigging and Safety .....	2	
SKMT	171	Sheetmetal Layout I .....	3	
SKMT	172	Sheetmetal II .....	3	
SKMT	173	Sheetmetal III .....	3	
SKPH	101	Applied Physics .....	4	
SKPT	126	Heating System Fundamentals .....	3	
SKWL	103	Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting .....	3	
SKWL	104	Introduction to Shielded Metal Arc Welding .....	3	
Total			35	

<b>Tool/Die Maker</b>				
SKCN	162	Computer Numerical Control Theory .....	4	
SKCN	216	CNC with Machining Applications .....	4	
SKDR	101	Sketching and Blueprint Reading .....	4	
SKDR	111	Drawing II .....	3	
SKDR	130	Tool and Die Design .....	4	
SKMA	103	Applied Geometry and Trigonometry .....	4	
SKMT	101	Hydraulics and Pneumatics I .....	3	
SKMT	111	Metals .....	3	
SKPH	101	Applied Physics .....	4	
SKTR	181	Machine Tool I .....	2	
SKTR	182	Machine Tool Lab II .....	3	
SKTR	183	Machinery Handbook .....	3	
Total			41	

<b>Pre-Apprentice Skilled Trades Mechanical Certificate</b>				
>>	ENG	--- ENG 108 or higher .....	3/5	
>>	SKMA	096 Pre-Algebra .....	0	
<b>OR</b>				
2	MATH LEVEL 3 .....			
>>	SKMA	097 Algebra I .....	0	
<b>OR</b>				
2	MTH LEVEL 4 .....			
>>	SKDR	101 Sketching and Blueprint Reading .....	4	
>>	SKDR	111 Drawing II .....	3	
>>	SKMT	101 Hydraulics and Pneumatics I .....	3	
>>	SKMT	111 Metals .....	3	
>>	SKTR	181 Machine Tool I .....	2	
>>	SKTR	182 Machine Tool Lab II .....	3	
>>	SKWL	103 Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting .....	3	
Total			24/26	

<b>Tool Hardener</b>				
SKDR	101	Sketching and Blueprint Reading .....	4	
SKDR	111	Drawing II .....	3	
SKDR	130	Tool and Die Design .....	4	
SKMA	103	Applied Geometry and Trigonometry .....	4	
SKMT	111	Metals .....	3	
SKMT	112	Ferrous Heat Treatment .....	2	
SKPH	101	Applied Physics .....	4	
SKTR	181	Machine Tool I .....	2	
SKTR	182	Machine Tool Lab II .....	3	
SKWL	103	Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting .....	3	
SKWL	104	Introduction to Shielded Metal Arc Welding .....	3	
Total			35	

<b>Agriculture Maintenance Certificate</b>				
>>>	ENG	--- ENG 108 or higher .....	3/5	
>>>	SKMA	096 Pre-Algebra .....	0	
<b>OR</b>				
2	MATH LEVEL 3 .....			
>>>	SKDR	101 Sketching and Blueprint Reading .....	4	
>>>	SKMT	101 Hydraulics and Pneumatics I .....	3	
>>>	SKMT	102 Hydraulics and Pneumatics II .....	3	
>>>	SKMT	151 Power Transmission .....	3	
>>>	SKET	106 Applied Electricity I .....	3	
>>>	AUT	108 Introductory Automotive Electronics .....	3	
>>>	AUT	110 Automotive Electronics Service .....	4	
>>>	SKWL	103 Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting .....	3	
>>>	SKWL	104 Introduction to Shielded Metal Arc Welding .....	3	
Total			32/34	

<b>Pre-Apprentice Skilled Trades Construction Certificate</b>				
>>>>	SKCT	114 Framing Square .....	4	
>>>>	ENG	--- ENG 108 or higher .....	3/5	
>>>>	SKMA	096 Pre-Algebra .....	0	
<b>OR</b>				
2	MATH LEVEL 3 .....			
>>>>	SKCT	111 Construction Print Interpretation .....	3	
>>>>	SKCT	102 Building Materials .....	3	
>>>>	RC	104 Construction Lab .....	3	
>>>>	SKWL	103 Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting .....	3	
Subtotal			19/21	
Total Credits Required For Electrical Certificate .....			24/26	
Total Credits Required For Mechanical Certificate .....			24/26	
Total Credits Required For Agriculture Maintenance Certificate .....			32/34	
Total Credits Required For Construction Certificate .....			19/21	

#### Notations:

**> Certificate Option:** An advanced certificate will be awarded when you successfully complete courses preceded by a greater than sign ">"

**>> Certificate Option:** A certificate of achievement will be awarded when you successfully complete courses preceded by a double greater than sign ">>"

**>>> Certificate Option:** An advanced certificate will be awarded when you successfully complete courses preceded by a triple greater than sign ">>>"

**>>>> Certificate Option:** An certificate of achievement will be awarded when you successfully complete courses preceded by a quadruple greater than sign ">>>>"

1. ENG 108 or higher is only required for completion of the Pre-Apprentice Skilled Trades Mechanical Certificate, the Pre-Apprentice Skilled Trades Electrical Certificate, Pre-Apprentice Skilled Trades Construction Certificate, or the Agriculture Maintenance Certificate.
2. Successful completion of SKMA 096 or MATH LEVEL 3. If you do not have the acceptable prerequisite level, you will be required to successfully complete SKMA 096. SKMA 096 credits cannot be applied to your program.
3. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
4. Delta College reserves the right to modify graduation requirements.
5. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

# Surgical Technology

Career Pathway: Health Science



## Associate in Applied Science Degree/ Advanced Certificate

The Surgical Technologist's primary function is to provide a safe, therapeutically effective environment for the surgical patient by assisting the surgeon and performing related services in the operating room. This program is accredited by CAAHEP and graduates will be eligible to sit for the National Certifying Exam.

	Sem	Hrs
<b>General Education Courses</b>		
>+*11 PHY 101 Applied Physics .....	4	
OR		
>+*11 PHY 111 General Physics I.....	AND (4)	
>+*11 PHY 112 General Physics II.....	(4)	
OR		
>+*11 PHY 211 Physics I.....	AND (5)	
>+*11 PHY 212 Physics II .....	(5)	
>+* BIO 152 Human Anatomy & Physiology I .....	AND 4	
>+* BIO 153 Human Anatomy & Physiology II .....	4	
OR		
>+* BIO 240 Human Anatomy .....	AND (4)	
>+* BIO 241 Physiology .....	(4)	
>+* BIO 203 General Microbiology.....	4	
ENG --- Any Approved College Composition I Course .....	3/5	
ENG --- Any Approved College Composition II Course .....	3/5	
>+* HSC 105 Medical Terminology.....	2	
>+* HSC 140 Basic Medical Emergencies .....	2	
LW --- Any 1 Credit LW Course (As of fall 2007) .....	AND 1	
LWA --- Any 1 Credit LWA Course .....	1	
OR		
LW --- Any 2 Credit LW Course (As of fall 2007) .....	(2)	
POL --- Any Approved American Government Requirement.....	3/4	
>+* PSY 101 Applied Psychology .....	3	
OR		
>+* PSY 211 General Psychology .....	(4)	
OR		
>+* SOC 211 Principles of Sociology .....	(3)	
>+* ST 100 Introduction to Health Care Service.....	3	
Subtotal	37/49	

+ Application to the clinical phase of this program may be made after successfully completing, with a "C" or better, all courses under General Education that are preceded by a plus sign "+". Please note - the physics requirement is effective for Fall 2007 validation and beyond.

### Clinical Courses

#### First Semester (Fall)

>+* ST 207 Pharmacology in the Operating Room.....	2
>+* ST 210 The Surgical Patient.....	2
>+* ST 220 Fundamentals of Surgical Technology .....	6
>+* ST 230 Surgical Anatomy .....	4
>+* ST 240 Operative Procedures .....	4
Subtotal	18

#### Second Semester (Winter)

>+* ST 250 Clinical Externship.....	12
>+* ST 251 Operating Room Seminar .....	3
Subtotal	15

Total Credits Required For Certificate ..... 59/60

Total Credits Required For Associate Degree ..... 70/82

### Notations:

> A Certificate will be awarded when courses preceded by a greater than (">") sign are successfully completed.

\* A "C" minimum grade is required in each asterisked course.

1. As an applicant, you must be a high school graduate or submit a GED equivalency certificate.
2. Math skills through Level 5 is required for this program.
3. Application: See Validation procedures in this catalog for the required process.
4. PRIOR to beginning clinical, you MUST have CPR certification, which includes the Two-Person Rescuer Technique. CPR certification must be renewed annually.
5. Once accepted, you must have a negative TB skin test and/or chest X-ray and a current physical examination that confirms you are free from communicable disease and capable of performing the duties necessary for the safe care of patients. It is highly recommended that you obtain the Hepatitis B vaccination.
6. You must achieve a minimum "C" (2.0) grade in each clinical course to be eligible to continue in this program. These courses must be taken in the sequence shown and enrollment in these courses is by permission only.
7. When in the clinical phase of the program, you must have transportation available, as sites may not be in your community.
8. There will be additional uniform expenses that will be explained at the Orientation to the Clinical.
9. You are responsible for paying the cost of any medical care that might be necessary if you are injured or become ill as a result of clinical practice activities. The College does not provide insurance coverage for such situations.
10. Student reentry procedures are printed in the Student Handbook given to all clinical students.
11. Please note - the physics requirement is effective for Fall 2007 validation and beyond.
12. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
13. Delta College reserves the right to modify graduation requirements.
14. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

Also see "Dual Degrees."

# Water Environment Technology

Career Pathway: Natural Resources and Agriscience



## Associate in Applied Science Degree/ Advanced Certificate

The vast majority of water and wastewater treatment plant operators work for local governments. Some work for private water supply and sanitary services companies, many of which provide operation and management services to local governments on a contract basis.

Graduation from this program will prepare you to make application to write the Wastewater Class "D" Operator Certification examination and the entry-level waterworks certification examinations.

		Sem Hrs
<b>General Education Courses</b>		
BIO 110	Environmental Science.....	4
>1 CHM 105	TECHNICAL CHEMISTRY I..... <b>AND</b>	5
1 CHM 106	TECHNICAL CHEMISTRY II (Recommended Sequence).....	5
<b>OR</b>		
1 CHM 111	General and Inorganic Chemistry I..... <b>AND</b>	(5)
1 CHM 112	General and Inorganic Chemistry II.....	(5)
> CST 133	Computer Concepts & Competencies .....	4
ENG ---	Any Approved College Composition I Course .....	3/5
ENG 113	Technical Communications (Recommended).....	3
<b>OR</b>		
ENG ---	Any Approved College Composition II Course .....	(3/5)
>3 MTH ---	Any Approved Intermediate Algebra Course .....	4
LW ---	Any 1 Credit LW Course (As of fall 2007).....	1
<b>AND</b>		
LWA ---	Any 1 Credit LWA Course .....	1
<b>OR</b>		
LW ---	Any 2 Credit LW Course (As of fall 2007).....	(2)
POL ---	Any Approved American Government Requirement.....	3/4
Subtotal		33/38
<b>Basic Program Requirements</b>		
>* WET 110	Water Treatment Technologies.....	3
>* WET 112	Wastewater Treatment Technologies.....	3
>* WET 210	Advanced Wastewater Treatment Technologies.....	3
>* WET 212	Advanced Water Treatment Technologies.....	3
* WET 215	Water Quality Analysis And Wet Instrumentation .....	3
>* WET 220	Water Quality Analysis and Microbiology.....	3
* WET 230	Water/Wastewater Utility Management.....	3
* WET 240	Applied Hydraulics.....	3
>* WET 244	Water/Wastewater Utility Equipment Maintenance.....	3
* WET 246	Water/Wastewater Utility Electrical Maintenance .....	2
2* WET 265	Practicum In Water/Wastewater Treatment.....	4
Subtotal		33
<b>Recommended Electives</b>		
2 ENV 100	Environmental Regulations.....	3
2 ENV 151	HAZWOPER Training.....	2.7
2 ENV 153	Confined Space Training .....	1.3
2 GLG 130	Environmental Geology .....	4
2 GLG 230	Introductory Field Methods In Hydrogeology.....	2
Total Credits Required For Certificate		31
Total Credits Required For Associate Degree		66/71

## Notations:

> A Certificate will be awarded when courses preceded by a greater than (">") sign are successfully completed.

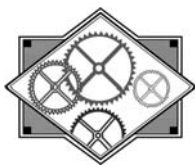
\* A "C" minimum grade is required in each asterisked course.

1. A student must take the sequence of CHM 105 and CHM 106 or the sequence of CHM 111 and CHM 112 to meet the AAS program requirements. The certificate option may be met by either CHM 105 alone, or the sequence of CHM 111 and CHM 112.
2. A student not wishing to take the Michigan Department of Environment Quality Water and Wastewater Entry-Level Exams may replace WET 265 with one of the recommended electives or an elective approved by the Division Chair or the Program Chair to complete at least 64 credits.
3. This requirement can also be met with an acceptable score on the current college assessment instrument. To meet minimum graduation requirements, credits may be replaced from the "Recommended Electives" course list above.
4. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
5. Delta College reserves the right to modify graduation requirements.
6. If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.



## Welding Engineering Technology

Career Pathway: Engineering/Manufacturing  
and Industrial Technology



### Associate in Applied Science Degree/ Advanced Certificate

The program combines specialized welding training with related technical and general education courses. The Associate degree program meets the educational requirements necessary to pursue a baccalaureate degree in a variety of welding related careers. Students should contact Counseling or the Welding Staff for career or transfer information.

				Sem Hrs
<b>General Education Courses</b>				
COM	112	Fundamentals of Oral Communication .....	3	
ENG	---	Any Approved College Composition I Course .....	3/5	
ENG	---	Any Approved College Composition II Course .....	3/5	
LW	---	Any 1 Credit LW Course (As of fall 2007) .....	1	
<b>AND</b>				
LWA	---	Any 1 Credit LWA Course .....	1	
<b>OR</b>				
LW	---	Any 2 Credit LW Course (As of fall 2007) .....	(2)	
MTH	---	Any Approved Intermediate Algebra Course .....	4	
MTH	121	Plane Trigonometry .....	3	
PHY	111	General Physics I .....	4	
POL	---	Any Approved American Government Requirement .....	3/4	
Subtotal			25/30	

<b>Technical Courses</b>				
*	CAD	114	Introduction to CAD .....	2
>*	WELD	103	Introduction to Plasma, Carbon Arc, and Fuel Gas .....	3
>*	SKMT	111	Metals .....	3
>*	WELD	114	Intermediate Shielded Metal Arc Welding .....	8
>*	WELD	120	Beginning Industrial Blueprint Reading .....	2
>*3	WELD	122	Blueprint Reading for Welders and Fabricators .....	2
>*2	WELD	220	WELD Qualification-Plate .....	4
>*4	WELD	224	Advanced Shielded Metal Arc Welding .....	8
>*	WELD	226	Gas Tungsten Arc Welding .....	8
>*	WELD	235	Gas Metal Arc Welding .....	8
Subtotal			48	
Total Credits Required/certificate .....			46	
Total Credits Required/associate Degree .....			73/78	

#### Notations:

> **A Welding Technology Advanced Certificate will be awarded when courses preceded by a greater than (">") sign are successfully completed.**

\* **A "C" minimum grade is required in each asterisked course.**

- For complete program description and details, please call Robert Ault at (989)686-9470 or Bruce Faccio at (989)686-9146.
- WELD 114 and WELD 235 are prerequisites for WELD 220.
- WELD 120 is a prerequisite for WELD 122.
- WELD 114 is a prerequisite for WELD 224.
- File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
- Delta College reserves the right to modify graduation requirements.
- If you plan to pursue an advanced degree, see pages 25 for special transfer agreements.

## Writing/Technical Writing

Career Pathway: Arts and Communications



#### Options:

**Writing Certificate - General**  
**Writing Certificate- Technical**

#### Certificate of Achievement

By completing this certificate, you will show future employers and educational institutions that you have a commitment to and competency with writing that goes beyond the required College Composition courses. While pursuing the certificate, you will have the opportunity to work in many different genres and forms of writing including journalism, technical writing, business writing, and creative writing. In addition, should you choose, you will have hands-on opportunities to learn technologies that support writing's endeavor to communicate.

				Sem Hrs
<b>Track 1: Writing - General</b>				
+	ENG	---	Any Approved College Composition I Course .....	AND 3/5
+	ENG	---	Any Approved College Composition II Course .....	3/5
<b>OR</b>				
+	OAT	151	Business Communication I .....	AND (3)
+	OAT	152	Business Communication II .....	(3)
Subtotal			6/10	

**In addition, students will take twelve (12) or more credits from the following for completion of certificate.**

+	CST	110	Web Page Development Using HTML .....	1
+	CST	146	Desktop Publishing .....	2
+	CST	210	Advanced Web Page Development .....	2
+	ENG	116	News Writing .....	3
+	ENG	120	Introduction to Creative Writing .....	3
+	ENG	211	Advanced Composition .....	3
+	ENG	213	Advanced Technical Communication .....	3
+	ENG	214	Introduction to Professional Writing .....	3
+	ENG	217	Advanced Reporting .....	3
+	ENG	218	News Editing .....	3
+	ENG	253	Creative Writing: Poetry .....	3
+	ENG	254	Creative Writing: Fiction .....	3
+	ENG	256	Personal Writing .....	3
+	ENG	257	Advanced Creative Writing .....	3
+	ENG	258	Introduction to Screenwriting .....	2
+	IHU	267	Producing A Student Publication .....	3
+	LIT	219	Literary Analysis .....	3
+	OAT	155	Editing .....	2
+	OAT	171	Document Processing: Beginning .....	3
Subtotal			12	

<b>Track 2: Writing - Technical</b>				
+	ENG	---	Any Approved College Composition I Course .....	AND 3/5
+	ENG	113	Technical Communication .....	3
<b>OR</b>				
+	OAT	151	Business Communication I .....	AND (3)
+	OAT	152	Business Communication II .....	(3)
+	ENG	211	Advanced Composition .....	3
+	ENG	213	Advanced Technical Communication .....	3
+	ENG	214	Introduction to Professional Writing .....	3
Subtotal			15/17	

One of the following courses is also required.

+ ART 101	Photography I.....	3
+ ART 271	Digital Imaging I.....	3
+ ART 276	Electronic Page Design .....	3
+ ART 279	Web Page Design Arts .....	3
+ COM 114	Interpersonal Communication.....	3
+ COM 202	Oral Communication for Managers.....	3
+ CST 146	Desktop Publishing.....	2
+ CST 147	Presentation Graphics Using PowerPoint .....	2

Subtotal 2/3

Total Required For Certificate (writing-general) 18/22

Total Required For Certificate (writing-technical) 17/20

#### Notations:

+ A "B" minimum grade is required in each course preceded by a "+" symbol.

1. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
2. Delta College reserves the right to modify graduation requirements.



## Youth Services Certificate

Career Pathway: Human Services



#### Options:

**Advanced Certificate**  
**Certificate Of Achievement**

This certificate provides current and future youth care workers with the skills needed to work with juveniles in many different settings. The program is geared toward casework and social work. Study areas focus on family dynamics and juvenile delinquency.

	Sem Hrs
<b>Certificate of Achievement</b>	
>* CJ 250 The Juvenile Offender .....	3
>* PSY 211 Any General Psychology .....	4
>* PSY 223 Child Psychology .....	3
>* SOC 211 Any Principles of Sociology Course.....	3
>* SOC 221 Marriage and Family .....	3
>* SOC 250 Introduction to Social Work.....	3
>*1, 2SOC 300 Interviewing, Counseling, and the Helping Relationship .....	3
Total Credits Required For Certificate Of Achievement	22

<b>Advanced Certificate</b>	
Youth Services Certificate of Achievement .....	22
>* PSY 225 Adolescent Psychology .....	3
>* SOC 212 Social Problems.....	3
>* SOC 215 Sociology of Minority Groups.....	3
>* SOC 231 Cultural Anthropology .....	3
Total Credits Required For Advanced Certificate	34

#### Notations:

> A Certificate will be awarded when courses preceded by a greater than (">") sign are successfully completed.

\* A "C" minimum grade is required in each asterisked course.

1. PSY 300W may be substituted.
2. SOC 300W prerequisite: ENG 111 or any approved College Composition I course.
3. Delta College reserves the right to modify graduation requirements.
4. File an application for an associate or dual degree and/or certificate with the Registrar's Office by at least 3 months prior to expected graduation. See page 114 for other graduation requirements.
5. Delta College reserves the right to modify graduation requirements.



# Non-Credit Programs

Delta College offers a variety of classes and programs designed to meet the needs of the diverse communities it serves through non-credit classes. These classes and programs do not lead to a degree or certificate, but are designed to assist individuals with their personal and professional development.

Delta views education as a lifelong process that takes place in a wide variety of environments. Classes are taught on the campus, in public schools, in industrial plants, in commercial office buildings, at Delta College Centers and at other locations.

The College is assisted by program advisory committees; professional, civic and church organizations; governmental agencies; business; the labor industry; and other groups in determining needs and providing education and training to the community.

**Financial Aid for Non-Credit Classes:** Financial aid for students enrolling for certain non-credit classes may be available. It is intended for individuals who are supported by some type of public assistance or those employed at a low income level. Students must be residents of Bay, Midland, or Saginaw Counties. Funds are limited. Requests for aid should be made prior to expected enrollment. *If aid is awarded, the balance must be paid by the student at the time of registration. Students are responsible for course fees, books, supplies, and materials.*

## Fantastics!

The Fantastics Program is a youth enrichment program that offers community education opportunities to children ages 8-17 years old. Class offerings are designed to challenge students through hands-on learning experiences.

For more information call 989-686-9185

Midland Callers 495-4000 ext. 9185

Frankenmuth, Reese, Birch Run and Vassar 758-3400



**On the Web:** [www.delta.edu/fantast/](http://www.delta.edu/fantast/)



## LifeLong Learning

LifeLong Learning classes enrich and improve your life. They help you pursue interests and hobbies, grow in your career and meet professional requirements, or simply learn something new and fascinating. Delta College offers these non-credit classes at times and locations designed for your maximum convenience. You can even take some online!

## Job Skills Training

These classes are for individuals who want to train for a new career. Programs are from 4 to 15 weeks in length and are in High-demand. Our students not only receive high-quality training, they also get jobs!

## Continuing Education & CEUs for Professionals

These classes help you earn continuing education (CEUs) credits in your current profession, prepare for professional exams, and fulfill licensing certification requirements. All programs have been developed to be high quality, affordable, and conscious of the value of your time.

## Life Skills & Personal Enrichment

Whether it is building a competitive edge at work by learning a new computer program, riding a motorcycle, taking an interest in sailing, understanding of sustainability and our legal system, maximizing your job search success, or preparing for the GED examination, do not miss the chance to do something for yourself!

## 50+ Just Like Gold

Continuing education, learning opportunities, re-careering, quality leisure time, and social interaction for Delta's community residents 50 and better. Engage with like minds and join today.

## Online Classes

LifeLong Learning at Delta College is proud to offer the world's most comprehensive collection of online courses. We provide self-study courses with open enrollment in nearly every subject imaginable. Easy to search, register and learn. Anywhere, anytime learning.

The one common aspect for all Delta College's LifeLong Learning programs is simple -- our instructors provide you with a high-impact experience in a minimal amount of time. For more information, call LifeLong Learning at 989-686-9444, or visit us on the web.



H-Wing - Main Campus  
Call 989.686.9444  
[lifelonglearning@delta.edu](mailto:lifelonglearning@delta.edu)



**On the Web:** [www.delta.edu/lifelonglearning](http://www.delta.edu/lifelonglearning)

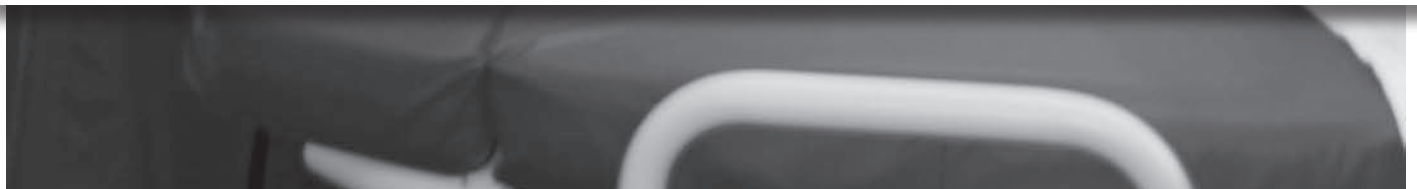


Health Science



Section IV

# Academic Policies





# Grading System

## Grades

The grading system at Delta College is a letter system with associated grade points which are used to compute cumulative grade point averages. You will receive one final grade in each course taken.

Grade	Meaning	Grade points per credit
A	Excellent	4.0
A-	Excellent	3.7
B+	Good	3.3
B	Good	3.0
B-	Good	2.7
C+	Average	2.3
C	Average	2.0
C-	Poor	1.7
D+	Poor	1.3
D	Poor	1.0
D-	Poor	0.7
F	Fail	0
P	Pass (C/2.0 grade or above)	– Not included in computing credits and grade points
NC	No Credit (C-/1.7 or below)	
I	Incomplete	
X	Audit	
W	Withdrawal – No Evaluation	
WI	Withdrawal – Instructor Initiated	

**Note:** Non Credit Courses also use the above letter grades for their courses; however, no grade points are awarded and grade point averages are not maintained.

Courses below 100 level are considered developmental and do not count toward credit hours earned, credit hours attempted, grade point average, or graduation.

## Final Grades

Final grades are generally available to you within one week of the official ending date of each semester. They are available via the Web through My Delta. See your most recent Course Guide booklet for access information. Final grades are listed on your official academic transcript, which is maintained by the Registrar's Office. Your final grade is the responsibility of individual faculty members. Instructors may exercise their own prerogatives with respect to your grades as long as these prerogatives do not conflict with other institutional policies.

## I - Incomplete

An instructor may assign an Incomplete grade if you have not fulfilled all course requirements when final grades are assigned. An Incomplete is a temporary grade given only when your work has been of **acceptable quality** near the end of the course, but the required amount has not been completed because of reasons satisfactory to the instructor.

**Requirements of a course are to be completed no later than December 1 for Incomplete grades issued in the Winter and Spring/Summer Semesters and April 1 for Incomplete grades issued in the Fall Semester.** In exceptional circumstances, additional time may be granted for completion of course work by written notification from the instructor to the Registrar.

## X - Audit

When you enroll in courses on an Audit basis, a grade of "X" will be recorded on your permanent record, if general requirements of auditing are fulfilled, and no credit will be earned. Some appropriate reasons for Auditing are professional enrichment or personal enjoyment. Tuition and fees are the same as for regular credit courses and a student number is required. Instructor Audit objectives must be fulfilled. Courses taken on an Audit basis are not applicable toward fulfillment of Associate degree or Certificate requirements. You must complete an Audit Request Form via "My Delta" or in the Registrar's Office **no later than the end of the Delta College official refund period.** (See each semester's class schedule booklet). For the deadline to request an Audit for courses that meet one week or less, you should contact the Registrar's Office. Any questions regarding the course Audit option should be directed to the Registrar's Office.

Audited courses **do not count** in determining student eligibility for financial aid. If you are receiving financial aid, you should contact the Office of Financial Aid before changing a course from academic credit status to Audit status. Audit grades will **not** be used in determining academic load for veterans' certification or athletic eligibility.

## W - Withdrawal

This grade is used when you officially withdraw from a course from the 12th calendar day through the end of the 12th week (4/5's of course length).

For information on the drop and withdrawal policies and procedures, see Section II, Enrollment, Registration.

## WI - Instructor Initiated Withdrawal

This grade is instructor initiated for lack of course prerequisites or attendance through four-fifths (4/5) of the course (the 12th week of a 15-week course).

## Grade Change Procedure

Once recorded by the Registrar's Office, grades will be changed only if an official Grade Change Form is submitted online by the instructor and approved by the appropriate academic Dean. The Grade Change Form must be received **no later than one year following grade issuance.** This policy does not apply to grade changes under consideration via the Disputed Grade Policy.

## Integrity of Academic Work

See Section VI, Regulations & References.

## P/NC - Pass/No Credit Option

The Pass/No Credit grade option is available for several courses at Delta College. If you are interested in this grading option in place of the usual "A" through "F" grading system, you should declare this choice at registration or **no later than** the end of the 12th week of the semester (6th week of a session) by completing a form at the Registrar's Office. Courses approved for the P/NC grade option are listed in each semester's Academic Class Schedule booklet.

### Guidelines and Procedures for P/NC Grades:

1. Grades on the P/NC system are not included in computing the semester or cumulative point average.
2. Grade of "P" (Pass): Credit is granted and represents performance at or above the "C"/2.0 level.  
Grade of "NC" (No Credit): No credit is granted and represents performance at or below the "C-"/1.7 level.
3. You may **not** apply more than a total of 12 credits of P/NC course work toward Delta graduation requirements.
4. Enrollment on a P/NC basis is recorded with the Registrar's Office. No indication of your P/NC status will be communicated to a faculty member by any office of the College.
5. A letter grade will be on file in the Registrar's Office, but only "P" or "NC" will appear on your transcript.
6. If you desire to have any grades converted from P/NC to letter grades, you may do so by applying to the Registrar's Office **no later than the end of the following semester after the P/NC grade was issued**.
7. Course prerequisites and other criteria for enrolling in any course shall be determined by the Department or Division offering the course and apply equally to both the traditional and the P/NC grading systems.
8. If you are planning to transfer, you should first check with a Delta counselor regarding the acceptance of the P/NC grade option for specific courses by the transfer institution.

## Grade Point Average (G.P.A.)

A student's Grade Point Average is determined by dividing the number of credits attempted into the grade points. For example:

	Attempted	Grade	Grade Points
ENG 111	3	B (3.0)	3x3=9
MTH 121	3	B (3.0)	3x3=9
BIO 111	4	C (2.0)	4x2=8
SOC 211	3	A (4.0)	3x4=12
	13		38
G.P.A. = 38 divided by 13 = 2.92			

**Credits Attempted** - Credits for which the student enrolled and for which grades of A through F were given. Credits for courses in which grades of P, W, WI, I, and X are given are not included here.

**Credits Earned** - Includes all academic credits taken at Delta for which final grades of A through D- were recorded. Courses below 100 are not included in credit hours earned.

**Credits Transferred** from other institutions or earned by examination are not included in cumulative averages.

**Non-Credit Courses** - Non-credit courses are not included in cumulative averages.

**Grade Points** - The number of grade points earned in a course is the number of credits multiplied by the number of grade points corresponding to the letter grade received. For example, a grade of B+ in a four-credit course equals 13.2 grade points ( $3.3 \times 4 = 13.2$ ).

**Repeated Courses** - The highest grade received by you for any given



course shall be the grade used in computing the cumulative grade point average and the number of credits shall only be counted once in the total number of credits attempted. All grades received by you in a given course shall, however, **remain on your academic transcript** but will be designated by the Registrar's Office as having been repeated, so it is clear that only the highest grades earned are being counted in cumulative totals.

You may not enroll in a course for credit or audit, whether completed or not, more than three times. Exceptions to this policy requires authorization by the appropriate Division Chair or Academic Dean.

## Academic Transcripts

Your transcript is the College's official academic record of your work. Your record is updated at the close of each semester. Your academic record includes all academic courses attempted and completed (course titles, credit hours, final grades and honor points), semesters enrolled, transfer credit accepted, courses waived, courses substituted, credit awarded by examination or advanced placement, certificates/degrees awarded, honors, and academic probation/dismissal status. Grades of most Non-Credit course work are also maintained by the Registrar's Office. There is no charge for transcripts up to a maximum of 5 per day. Copies will be sent upon your written request to anyone designated by you. Ordinarily transcripts are mailed within one week. Transcript copies will not be furnished if you have delinquent accounts at the College.

## Attendance Policy

It will be necessary for certain groups of students (e.g., veterans, financial aid recipients) to adhere to attendance requirements imposed by the policies of external regulatory agencies beyond the following stipulated by Delta College:

1. Attendance is expected at all courses for your maximum achievement.
2. It is your responsibility to make arrangements for missed course work.
3. The College recognizes that on occasion special College-connected events will conflict with scheduled course/laboratory times. Before those special occasions, you will need to work with the instructor to make alternate arrangements.
4. Individual instructors determine attendance rules and will explain those rules at the initial course meeting and/or in the course syllabus.

## Change of Student Information

A change in your name, home address, e-mail address, or program needs to be reported immediately to the Registrar's Office or the Admissions Office. Most communications, and Grade Reports will be sent to your Delta e-mail address. Legal name changes, other than marriage, or a Social Security number change require proper documentation.

## Classification of Students

The classifications below apply only to academic students pursuing Certificate or Associate degree programs. Non-Credit course hours are not included.

<b>Freshman</b>	29 or fewer credits earned
<b>Sophomore</b>	30 or more credits earned
<b>Full-Time</b>	Enrolled in 12 or more credits during a semester
<b>Part-Time</b>	Enrolled in 11 or fewer credits during a semester

## Financial Aid Attendance Information

By federal regulations, attendance follow-up must be done for financial aid recipients who drop to 0 credits, who end the semester with all "F" grades or a combination of "F" and "W" grades, and for whom instructors process instructor-initiated drops. In all cases, if it is found that students never attended, aid will be adjusted, funds will be returned to appropriate aid programs, and the students will be billed.

## Semester Honors

Each semester a President's List is issued of all students who receive a grade point average of 4.0 for that semester; a Vice President's List for all students who receive 3.7 through 3.99 grade point averages; and a Dean's List of students who receive 3.5 through 3.69 grade point averages. To be eligible, you must complete at least 6 credit hours in a Fall, Winter or Spring/Summer Semester. Courses taken on the Pass/No Credit option do not apply.



# Disputed Final Grade Policy



## Student Guide For Disputed Final Grade

The process involved in deciding to pursue a remedy to a final grade that you are disputing is not easy. Because of the emotional stress and strain that may accompany this process, you should follow these basic steps toward evaluating whether there is factual merit to your dispute and how you need to organize the facts so that others involved might agree with your dispute and support a resulting change in your final grade.

Because Delta is a college-level adult environment, our philosophy is that students are self-sufficient, independent and responsible participants in the interactive, give-and-take, and subjective learning process. There is a human element on the side of the student and on the side of the instructor in every class situation. The human element means that portions of a final grade that may be subjective in nature are always the prerogative of the instructor.

A grade dispute must be based on correctable items or issues. For example, you must be able to point to concrete factors that have affected your final grade—points were left out of the grading total; an exam, project or presentation was scored incorrectly or not counted in the final tally; a project or some extra-credit work did not get factored into the final point total, etc. Examples like these can be verified or discovered by the instructor and/or division chairperson as they respond to your dispute.

Since a final grade assignment is made on an individual basis, the dispute procedure can only be used by an individual questioning his or her own grade and cannot be used by one individual on behalf of a group of individuals.

### Grounds for Appeal:

There are only three grounds for a student grade appeal, and any of these grounds may be sufficient to warrant an appeal.

1. The assignment of a grade in a manner other than that described on the course outline or course syllabus.
2. The assignment of a grade using a method other than that used for the other students in the class.
3. The assignment of a grade in a manner inconsistent with College policy, rules and regulations.

### Evaluation Strategy 1:

Your first step when considering a final grade dispute should be to revisit the course syllabus and compare its elements to where you believe an error in grading occurred. The initial syllabus is very important to your evaluation of how or whether to proceed. It was your "roadmap" for the course and should contain the expectations, standards, and measurements regarding how a final grade would be achieved. In this evaluation you should be able to break your grade down into its various pieces – quizzes, papers, projects, presentations, exams, and elements of class attendance requirements and participation.

### Evaluation Strategy 2:

When considering a dispute, this part of your evaluation is critical. You need to understand that learning style differences, needing a certain grade for transfer, meeting a prerequisite, or simply needing or expecting to do better in a course, are not disputable elements. These elements may have had a legitimate impact on your final grade, but it is expected that they would have been addressed much earlier in the course experience and in ways that would support the college-level independence, self-sufficiency and personal responsibility pointed out earlier.

### Evaluation Strategy 3:

If after careful self-reflection in steps 1 and 2 you believe that the appeal of your final grade is still solid and tangible, then you should go to the more official step of filing your dispute with the Grade Ombudsman, Karen Treadway (LLIC), Phone (989) 686-9275 or email [kgtheadw@delta.edu](mailto:kgtheadw@delta.edu). The following outlines the basic steps and timelines contained in the Disputed Final Grade Policy, 4.025. A complete copy is available from the Grade Ombudsman.

## Informal Process

A student who wishes to discuss concerns regarding a grade will contact the faculty member and/or the division chair no later than twenty-five calendar days following the date the grade was posted or the date the grade was due, whichever date is the latest. The faculty member and the student will attempt to resolve the differences. The division chair may be asked to assist with the conflict resolution.

## Formal Process

1. To formally appeal a final grade for a course, the student **must** contact the Grade Ombudsman within five (5) calendar days after the conference with the faculty member and/or division chair.
2. The student will write, within five calendar days of meeting with the Grade Ombudsman, a formal statement that explains the circumstances of the disputed grade. The statement will be given to the faculty member by the Ombudsman.
3. The faculty member will write a statement of response and submit it to the division chair and the Grade Ombudsman within five calendar days of receiving the student's statement.
4. The grade Ombudsman will supply the student with a copy of the faculty member's statement and supply the division chair with a copy of the student's statement.
5. The chair will meet with the student and the faculty member within five calendar days of receiving the student's and faculty member's statements to discuss the grade appeal.
6. The chair will take one of the following actions within two calendar days of the meeting with the student and the faculty member:
  - Dismiss the appeal and the grade remains.
  - Recommend a change of grade, or a change in the grade under specific conditions which are defined by the chair.
7. The recommendation of the chair may be appealed to the Grade Appeal Board by either the faculty member or the student within three calendar days of receiving the chair's recommendation.
8. The Grade Appeal Board is composed of seven members: four faculty members, (three appointed by the Faculty Executive Committee and one appointed by the chair from the Division which offers the course in which the grade is being appealed); the appropriate academic dean; one Student & Educational Services representative appointed by the Vice President of Student & Educational Services; and one student from the Student/Senate Liaison Committee, appointed by the Senate President.
9. The Grade Appeal Board will meet within 10 calendar days of receiving the appeal at a time when both parties are available to respond to the Board's questions. Under special circumstances, alternates may be appointed to the Grade Appeal Board by the person originally responsible for the appointment of that position.
10. By majority vote, the Grade Appeal Board will make one of the following decisions within two calendar days of the meeting:
  - The appeal is dismissed and the grade remains.
  - The grade dispute is resolved by changing the grade, or changing the grade under specific conditions. All members of the Board will determine if the grade should be changed and the faculty members on the Board will decide the specific grade to be awarded.
11. Decisions reached by the Grade Appeal Board may be appealed to the President of the College. The President will only hear appeals that involve claims of procedural mistakes made in the process defined above. The President may:
  - Dismiss the appeal
  - Return the case to the Grade Appeal Board for rehearing.



# Academic Status

## Standards of Academic Achievement

1. A minimum cumulative grade point average of "C" (2.0) must be achieved to graduate with an Associate degree or Certificate.
2. A student making **Satisfactory Progress** is defined as:
  - a. Satisfactory/No Conditions - A student whose cumulative Grade Point Average satisfies the **Academic Status Scale**.
  - b. Academic Caution - A student whose cumulative Grade Point Average (GPA) satisfies the **Academic Status Scale** but is below 2.0 and the credit hours attempted are less 45.
3. A student making **Unsatisfactory Progress** is defined as:
  - a. Academic Probation - A student who has attempted 13 or more credit hours and whose cumulative GPA is below the required grade point average as indicated on the **Academic Status Scale**.
  - b. Academic Suspension - A student who has been on Probation for at least two Academic Semesters or who has not met the conditions of their **Academic Improvement Plan**.

## Table for Determining Academic Status

Following is the table for determining your academic status at Delta College. To use the table: 1) locate on your grade report or academic transcript your cumulative grade point average and the total number of credits attempted; 2) find the corresponding credits attempted in the left-hand column of the table; and 3) read across the page to your right until you locate the column which includes your current cumulative grade point average. This column heading indicates whether you are making Satisfactory Progress or are on Academic Probation.

### Academic Status Scale

Credit Hours Attempted	Satisfactory Progress		Unsatisfactory Progress
	No conditions	Caution	Probation
	GPA	GPA	GPA
0 - 12.9	1.50 - 4.0	0.00 - 1.49	
13.0 - 23.9	1.75 - 4.0	1.50 - 1.74	0.00 - 1.49
24.0 - 44.9	2.00 - 4.0	1.75 - 1.99	0.00 - 1.74
45.0 or more	2.00 - 4.0		0.00 - 1.99

## Procedures for Academic Caution, Probation, and Suspension

### I. ACADEMIC CAUTION:

Following each semester, students are notified of their status by the Registrar. Caution students are strongly urged to seek the assistance of an appropriate member of Counseling /Advising.

### II. ACADEMIC PROBATION:

After each semester's grades have been posted, students placed on probation will be notified of their status by the Registrar and will be **required** to develop an Academic Improvement Plan (AIP)<sup>1</sup> with an assigned member of Counseling /Advising. An approved AIP must be on file in the Registrar's Office before students will be allowed to enroll.

### III. ACADEMIC SUSPENSION:

Students on Academic Probation for at least two semesters, who have not met the conditions of their AIP, will be notified of their status by the Registrar's Office. They will be denied enrollment for two consecutive semesters and will also be de-enrolled from classes in which they have already registered for upcoming semesters.

1. Students placed on suspension who may have mitigating circumstances<sup>2</sup> may appeal their suspension to the Dean of Student & Educational Services or his/her designee. If the appeal is successful an AIP will be required prior to registration.
2. Students who wish to enroll *following two semesters on suspension* will be required to meet with an assigned member of Counseling/Advising and have a new AIP on file in the Registrar's Office prior to registering.

#### <sup>1</sup> ACADEMIC IMPROVEMENT PLAN (AIP)

An **Academic Improvement Plan** is an agreement that specifies actions to be taken by the student. It includes such things as:

- Specific course selection that will provide for maximum success.
- Number of credits to attempt that semester (based on data presented by student) and approved by counselor or advisor.
- Assistance e.g. tutoring, selecting peer mentored classes, meeting with instructor.
- Time management strategies.
- Other services as appropriate including Disability Concerns, counselors, career center, etc.

#### <sup>2</sup> MITIGATING CIRCUMSTANCES

Mitigating circumstances are *documented* conditions beyond the reasonable control of the student that will have a *long-term* effect. Students considering an appeal must first consult with their Counselor/Academic Advisor.

## Fresh Start Policy

If you wish to re-enroll after an absence from Delta College of three or more years you may submit a request to the Registrar to have your GPA recomputed using only grades earned after enrollment. If the request is approved, all courses previously taken at Delta College will remain on your permanent record/transcript. All course grades prior to re-enrollment will be converted to P/NC grades. Courses with grades of A, A-, B+, B, B-, C+, C will become P grades with credit; all other course grades will become NC grades without credit. You may only use the Fresh Start Policy once. The cumulative GPA and Academic Achievement policy conditions will be computed using all grades earned from the point of re-enrollment. Note: Regardless of the number of P grades resulting from this policy, a maximum of twelve (12) credits of P grades may be applied toward Delta College graduation requirements. You are advised to discuss this option with your Counselor prior to the request.

# Standards of Academic Progress for Financial Aid Recipients

**Students must be making satisfactory academic progress toward the completion of a Certificate or Associate degree to be eligible for financial aid.**

Standards of Academic Progress for Financial Aid Recipients are applied to all students receiving financial assistance after they have attempted 12.9 credits at Delta College. All semesters and courses in which students registered at Delta College are included in determining Satisfactory Academic Progress, regardless of whether or not the students received financial aid for those semesters and courses.

## I. Standards of Academic Progress for Financial Aid Recipients

- A. Making Satisfactory Academic Progress is defined as earning a cumulative grade point average (GPA) consistent with the Academic Status Scale below. In calculating the GPA on this Scale, all credits for which students ever enrolled at Delta College are included (grades A through F, P, NC, I, W, and WI, plus all repeated courses).

### ACADEMIC STATUS SCALE

Attempted Delta Credits	Minimum GPA Required
0-12.9	0.00
13-23.9	1.50
24-44.9	1.75
45 or more	2.00

- B. Making Satisfactory Academic Progress is also defined as having satisfactorily completed 67% or more of all credits in which students have ever enrolled at Delta College.
1. Grades of A, A-, B+, B, B-, C+, C, C-, D+, D, D- or P are considered to be satisfactory completions.
  2. Grades of W, WI, NC-No Credit, I-Incomplete, and F-Failure are not considered to be satisfactory completions.
  3. For students with repeat grades, the lower grade is considered to be an unsatisfactory completion and the higher grade is considered to be a satisfactory completion.
  4. For students choosing the Fresh Start option, grades changed to P are considered to be satisfactory completions. Grades changed to NC are not considered to be satisfactory completions. (Students choosing this option should be aware that grades of C-, D+, D, and D-, which are considered as satisfactory completions, will be converted to NC grades, which are not considered to be satisfactory completions.)
- C. Satisfactory Academic Progress also requires that financial aid recipients complete the Certificate or Associate degree within a time frame which, by federal regulation, is 150% of the published length of the program. For example, if a student is in an Associate degree program that requires 62 credits, the degree must be completed in a maximum of 150% of 62 credits, or 93 credits including both attempted and completed credits. (Students should consult the Delta College Catalog, Section III, Programs of Study, to find the number of credits required in their Certificate or Associate degree program, then multiply that number by 1.5 to determine the maximum number of credits.)
1. When students reach the maximum number of credits, financial aid will be terminated.
  2. All semesters are taken into consideration when determining the maximum number of credits, whether or not students received aid during those semesters.
  3. All grades (A through F, P, I, NC, W, and WI) and repeated courses are counted in determining the maximum number of credits.
  4. Transfer credit must be taken into consideration when calculating the maximum number of credits for an Associate degree and for a Certificate.

Academic records of aid recipients are reviewed by the Financial Aid Office prior to awarding for the standard academic year (Fall and Winter Semesters) to ensure that Standards of Academic Progress for Financial Aid Recipients continue to be met. Records are reviewed again prior to awarding for the Spring Semester. Additionally, academic records for loan recipients are checked prior to each disbursement. Students receiving aid whom the College places on Academic Probation between reviews will maintain their aid eligibility (but not their loan eligibility) for the probational semester(s) until the next review, providing them with the opportunity to improve their academic records and once again meet Standards. If Standards of Academic Progress for Financial Aid recipients are not met at the time of the next review, financial aid will be terminated.

## II. Appeals

- A. Students who have been terminated from further financial aid for failure to meet Standards of Academic Progress have the right to appeal. All appeals must be submitted in writing on the Satisfactory Academic Progress Appeal Form to the Financial Aid Office. Appeals must be received no later than one week before the semester begins. Appeals received after that time will be considered to be appeals for the following semester, unless the students are officially registered in classes (tuition and fees are paid and students are in attendance). Students submitting appeals should state the reasons why satisfactory progress was not made and discuss actions that have been or will be taken to make satisfactory progress in the future. **Documentation supporting the reasons for the appeal must be attached. Appeals submitted without documentation will not be considered.** Mitigating circumstances beyond the reasonable control of students, such as injury or illness, death of a relative, or other special circumstances may be grounds for successful appeals.
1. If appeals are approved, students will receive an additional probational semester of aid during which they must **EITHER** complete all courses in which they register with grades of C (2.0) or better (no C-, D+, D, D-, F, or NC grades), and with no Withdrawals (W or WI) and no Incompletes (I), **OR** once again meet the Delta College Standards of Academic Progress for Financial Aid Recipients. At the end of the semester, grades will be checked.
  2. If students have met the Standards of Academic Progress for Financial Aid Recipients, aid will once again be awarded. If students have not met these Standards, but have met the conditions stated in No. 1 above, further aid will be granted on a probational semester-by-semester basis. Grades will be checked at the end of each semester before aid is awarded for the next semester to ensure that students are continuing to make academic progress. This process will continue until such time as the student once again meets the Standards of Academic Progress for Financial Aid Recipients. If it should be found that students have not made academic progress during one of these probational semesters, aid will be denied and the students will have to attend at their own expense until such time as the Standards of Academic Progress for Financial Aid Recipients are once again met.
- B. A second appeal may be made in writing to the Director of Financial Aid, who will convene the Financial Aid Appeal Committee the first week of each month to review second appeals. The Director will inform the student of the Appeal Committee's decision, which will be considered final.



# Graduation Requirements

## Degrees and Certificates Granted by Delta College

- Associate in Arts
- Associate in Science
- Associate in Fine Arts
- Associate in Applied Arts
- Associate in Applied Science
- Associate in General Studies
- Associate in Business Studies
- Dual Degree
- Certificate of Completion
- Certificate of Achievement
- Advanced Certificate
- Post Associate Certificate

## Basic Requirements

1. Earn a minimum cumulative grade point average of "C" (2.0) in the courses required to complete a specific Associate Degree or Certificate.
2. Fulfill all of the prescribed requirements of the Degree or Certificate including courses, credit hours, grades, and/or hours of attendance. See Section III, Programs. (Courses numbered below 100 do not count toward any associate degree or certificate.)
3. Successfully complete "key courses" in a program within a stated timeframe. Students may, therefore, need to repeat certain courses, even though a passing grade was previously earned.
4. File an application for an Associate or Dual degree and/or Certificate with the Registrar's Office at least three months before your anticipated graduation date.
5. Fulfill all financial obligations to Delta College.
6. The number of P (pass) credits applied to a Degree or Certificate must not exceed 20% of total required credits of the Degree or Certificate and must not exceed 12 credits.
7. For Certificates, earn at Delta College a minimum of two-thirds (2/3) of program credits or 24 credits, whichever is less. Any programmatic exceptions to the two-thirds (2/3) or 24 credit requirement will be approved by the Curriculum Council and identified in Section III, Programs.
8. For Associate Degrees, earn a minimum of sixty-two (62) credits hours. A minimum of twenty-four (24) semester hours must be Delta College academic credits.

## Course Designations

Courses designated by an "H" (for Honors), "C" (for courses that require co-registration in another course), and "W" (for Writing), are considered course variations of a regular course and incorporate the same course content. Course variations are considered equal in meeting graduation requirements and prerequisites. Lab courses designated by an "L" are *not* considered a course variation

## Statement of General Education

Delta College is committed to general education for our community college students. General education develops basic knowledge, critical thinking skills, and values that influence our behavior and motivate us as lifelong learners. Delta College, along with area employers, transfer institutions, and the greater community, agrees that general education is key to personal and professional success.

## Continuous Attendance

If your attendance has been **continuous** in the same program you may, for the purpose of graduation, elect either the program in effect at the time of your first registration at Delta or the program in effect at the time of your application for graduation. **Continuous attendance is defined as attending a minimum of one semester during each academic year since your first registration or when you officially declared your program of study.** If your attendance has not been continuous, you must follow the program in effect at the time of your readmission.



## Group Requirements for Associate in Arts and Science Degrees

Completion of requirements for either the Associate in Arts Degree or the Associate in Science Degree may fulfill the requirements of the MACRAO Articulation Agreement. Information on the MACRAO Articulation Agreement is on page 23.

Specific major program requirements and acceptable courses within the group requirement areas differ among transfer colleges and universities. It is recommended that if you are planning to transfer, you should consult with a counselor/advisor to ensure that your planned course work meets the requirements for graduation from Delta College as well as specific requirements at other institutions into which you may wish to transfer.

**You must complete courses from at least two subject areas listed in each of Groups I, II, and III.** "All" includes courses numbered 100-299; courses below 100 are excluded. Courses listed in more than one group may only be counted once.

### **Group I: Humanities** (in at least two subject areas)

American Sign Language (ASL): All  
Architectural Technology: ARC 251 only  
Art: All except ART 113, 219, 283, 289  
Communications (COM): All  
Electronic Media Broadcasting: EMB 140, 175 only  
English: ENG 120, 214, 253, 254, 256 only  
French (FR): All  
German (GE): All  
History: HIS 111 and 112 only  
Interdisciplinary Humanities (IHU): All  
Literature (LIT): All  
Music: All except MUS 138  
Philosophy (PHL): All  
Psychology: PSY 232  
Spanish (SPA): All except SPA 109  
Social Science Interdisciplinary: SSI 110, 232, 234 only

### **Group II: Social Science** (in at least two subject areas)

Biology: BIO 230 only  
Economics (ECN): All  
History (HIS): All  
Geography (GEO): All except GEO 103, 111, 261, 267  
Interdisciplinary Humanities (IHU): 110 only  
Interdisciplinary Social Science (SSI): All  
Political Science (POL): All  
Psychology (PSY): All except PSY 235, 300  
Sociology (SOC): All except SOC 157, 158, 159, 161, 162, 300  
Social Science Interdisciplinary (SSI): All

### **Group III: Natural Science** (in at least two subject areas; must include at least one lab science of 15 contact hours.)

Astronomy (AST): All  
Biology (BIO): All  
Chemistry (CHM): All  
Computer Science: CST 180, 183, and 280 only  
Environmental Science: ENV 310, 320 only  
Geography: GEO 103, 111, 261, and 267 only  
Geology (GLG): All  
Interdisciplinary Science: SCI 250, 290-299 only  
Mathematics: MTH 110 and above except MTH 117  
Physical Science (PSC): All  
Physics (PHY): All  
Sociology: SOC 230 only

**Note:** HIS 111 and 112, PSY 232 may be included in either Group I or Group II, but may not be counted in both groups. BIO 230 and SOC 230 may be included in either Group II or Group III, but may not be counted in both groups.

## Associate in Arts (A.A.)

1. Fulfill all Basic Requirements.
2. Satisfactorily complete six credits in English composition or an approved equivalent from the following:  
ENG 111, 111H, 111C, or 111A; and ENG 112, 112H, 112A, ENG 113 or ENG 211.
3. Satisfactorily complete 8 credits minimum in each of Groups I, II and III.
4. Successfully complete six credits in content-area writing courses. Students with previously-earned degrees from regionally accredited colleges and universities are exempt from this policy.
5. Successfully complete two credits of Lifelong Wellness:  
LW --- (2 credits), or  
LW --- (1 credit) and any LWA course (1 credit), or  
LW 206A, LWA 206B, and LWA 206C for occupational programs (2 credits).
6. Successfully complete an approved course in government: POL 103, 104, 111, 212, 215, 220, 221, 223, 225, or 228.

## Associate in Science (A.S.)

1. Fulfill all Basic Requirements.
2. Satisfactorily complete six credits in English composition or an approved equivalent from the following:  
ENG 111, 111H, or 111A; and ENG 112, 112H, or 112A, ENG 113 or ENG 211.
3. Satisfactorily complete 8 credits minimum in each of Groups I and II plus 20 credits minimum in Group III.
4. Successfully complete six credits in content-area writing courses. Students with previously-earned degrees from regionally accredited colleges and universities are exempt from this policy.
5. Successfully complete two credits of Lifelong Wellness:  
LW --- (2 credits), or  
LW --- (1 credit) and any LWA course (1 credit), or  
LW 206A, LWA 206B, and LWA 206C for occupational programs (2 credits).
6. Successfully complete an approved course in government: POL 103, 104, 111, 212, 215, 220, 221, 223, 225, or 228.

## Associate in Applied Arts (A.A.A.)

1. Fulfill all Basic Requirements.
2. Satisfactorily complete all courses listed in one of the Delta College occupational curricula. See Section III, Programs.

## Associate in Applied Science (A.A.S.)

1. Fulfill all Basic Requirements.
2. Satisfactorily complete all courses listed in one of the Delta College occupational curricula. See Section III, Programs.

## Associate in Business Studies (A.B.S.)

1. Fulfill all Basic Requirements.
2. Satisfactorily complete all courses listed in one of the Delta College occupational curricula. See Section III, Programs.

## Associate in Fine Arts (A.F.A.)

1. Fulfill all Basic Requirements.
2. Satisfactorily complete all courses listed in one of the Delta College occupational curricula. See Section III, Programs.

## Associate in General Studies (A.G.S.)

This degree will meet your needs if your goal is self-enrichment and you are not following a specific occupational or transfer program. All courses offered for academic credit at Delta College are applicable to this degree as per course descriptions. Because of the limited transferability, or in some cases non-transferability, of this degree, it is strongly suggested that you discuss this option with a counselor/advisor and consider fulfilling the Group Requirements.

1. Fulfill Basic Requirements Nos. 1, 2, 4, 5, 6, and 8.
2. Successfully complete six credits in content-area writing courses.\* Students with previously-earned degrees from regionally accredited colleges and universities are exempt from this policy.
3. Successfully complete an approved course in government: POL 103, 104, 111, 212, 215, 220, 221, 223, 225, or 228.

## Dual Associate (A.A.S. & A.B.S.)

Dual Associate degrees are available in several approved occupational fields. The requirements are generally completed simultaneously. Your diploma will list both degrees: Associate in Applied Science and Associate in Business Studies.

1. Fulfill Basic Requirement.
2. Satisfactorily complete an additional 24 credits minimum, as prescribed for the approved dual degree. See Section III, Programs of Study, Dual Degrees.
3. A student with no prior college degree would have to earn a **minimum** of 86 credits to earn a Dual Degree (62 for the Health Degree and 24 for the Business degree).

Students who have earned a degree previously may not use courses from that degree to satisfy the requirements of a "Dual Degree." It is possible that a student's previous degree may have included one or more of the required business courses (MGT 153, 245). They do not have to retake such classes, but must replace them from the list of approved business courses under the dual degree to complete an additional 24 credits for the Dual Degree.

## Subsequent and Simultaneous Associate Degrees

Associate degrees can be earned from Delta College simultaneously or following the first earned degree; however, when you complete two or more curricula in the same Degree with a difference of less than 24 credits, you will receive only one Associate degree and the transcript shall indicate that you have completed requirements in two or more curricula. Candidates for subsequent or simultaneous degree(s) must meet the following requirements:

### A. General Requirements

1. Satisfactorily complete a planned curriculum in one of the following degrees: Associate in Arts, Applied Arts, Applied Science, Business Studies, Fine Arts or Science.
2. Earn a minimum of twenty-four (24) additional semester hours of credit by instruction at Delta College. Accordingly, the minimum number of credits earned must equal the credits required for the first degree plus 24.
3. Fulfill Nos. 1, 2, 3, 4, 5, 6, and 8 of the Basic Requirements.

### B. Subsequent Associate Degree Requirements

1. Already have earned a Baccalaureate, or higher degree from a "regionally accredited institution." Previously earned credits will be evaluated for transfer to this degree.
2. Writing, Lifelong Wellness and government requirements will be waived for candidates with a Baccalaureate or higher degree from a regionally accredited institution, unless occupational curricula competencies specify otherwise.

### C. Simultaneous Associate Degree Requirements

1. While working on one degree at Delta College, students may complete courses applied to a second Associate Degree. Therefore, credits earned beyond those needed for the first degree may be applied toward the second degree.
2. When the student completes two or more curricula in the same Degree (Associate in Arts, Applied Arts, Applied Science, Business Studies, Fine Arts or Science) with a difference of less than twenty-four (24) semester hours of credit, the student will receive only one (1) Associate Degree and the transcript will indicate that the student has completed requirements in two or more curricula.

# Commencement



One of the most memorable moments in your life will be receiving your Certificate or Associate degree from Delta College. You will want to attend Commencement, which will highlight this special moment for you and your family. Give your family and friends the special pleasure of seeing you graduate from Delta College.

Although you may complete graduation requirements at the end of the Fall or Spring Semester, Commencement ceremonies are only held once a year at the end of the Winter Semester. Diplomas are mailed to you by the Registrar's Office approximately four weeks after the end of the month in which you complete your requirements.

The Commencement Program and your academic transcript will carry special designations if you complete your Associate degree with an outstanding academic record according to the following cumulative grade point averages:

- 3.50 -3.69 Honors
- 3.70 -3.89 High Honors
- 3.90 -4.00 Highest Honors

Transfer students are eligible for graduation honors if they have completed the last twenty-four (24) credit hours of a curriculum at Delta College.

## Student Awards

Outstanding students are recognized each year for their academic achievement and leadership while in attendance at Delta College. These awards are sponsored by individuals, businesses, and organizations that are committed to the Delta College Community. The Graduate Student Award Ceremony and Reception is held the week prior to Commencement each spring. Award recipients are presented an individual plaque, have their name inscribed in a group plaque for display in a Delta College showcase, and are presented a cash honorarium. Award application information is available from the Vice President of Students Office B-137 mid-January.

**Candidates are encouraged to apply for an award and MUST meet the following criteria:**

- Already graduated with an Associate Degree in the proceeding months of May – December OR
- Graduating with an Associate Degree in January, February, March, or April. Application for Graduation must be submitted to the Registrar's Office
- Recipient may not win the same award twice.

**Items considered by all Award Selection Committees:**

- Delta College Cumulative Grade Point
- Delta College Grade Point in coursework directly related to specific award
- Community involvement active participation in volunteer associations, college clubs( and organizations, church clubs and associations, independent volunteerism examples)
- Letters of recommendation from faculty/staff, supervisors, and volunteer coordinators.

## Award Descriptions:

### Board of Trustees Award

Presented to the graduate(s) who has earned the highest academic average.

### William R. Collings Award of Excellence–Highest Recognition Award

The Outstanding Achievement, Leadership Potential and Service Graduate Award was established by Dow Corning Corporation of Midland, in memory of Dr. William R. Collings. Dow Corning Corporation was formally established in 1943, and Dr. Collings was named company's first general manager, later serving as president from 1954 to 1962. He

was also a Charter Member of the Delta College Board of Trustees, and served on the Board from 1957 to 1976. The Dr. William R. Collings Award of Excellence has been given out since 1986 in memory of Mr. Collings' wise and generous counsel and superior leadership as president of the Dow Corning Corporation. This award recognizes academic achievement and superior citizenship. The graduate must have an excellent academic record and potential for outstanding future achievement. Evidence of demonstrated leadership in extracurricular activities that benefit the College and community is essential. Finalists will be contacted for a personal interview with the Awards committee.

### Robert & Joyce Hetzler Family – Highest Recognition Award

Outstanding Graduate in Service & Leadership. The Hetzler Award was established in honor of Robert and Joyce Hetzler Family. Mr. Hetzler is former Chair of the Foundation Board, and the retired President and Chief Executive Officer of Monitor Sugar Company. Mrs. Hetzler taught home economics at schools in Michigan and Virginia for five years before raising the couple's children. The award recognizes the graduate who has demonstrated outstanding achievement based on service and leadership to the college and the community. A high level of academic achievement at Delta must also be evident as documented by letters of recommendation or other documentation. Personal service and leadership examples include, but are not limited to volunteer work at schools, churches, charitable organizations, and fund raisers. Finalists will be contacted for a personal interview with the Awards Committee.

### Art Award – Sponsor: Peter & Suzanne Frantz

The Peter B. and Suzanne Smith Frantz Art Award Endowment was made possible with a gift of from Mr. Frantz in memory of his wife. Mr. Frantz spent his career as an architect, and authored a book in 2000, *Jane's Letters from Ireland: 1884-1886*, featuring letters from his maternal grandmother, Jane Stanley, one of America's premier watercolor artists. Mrs. Frantz, who passed away in July 2005, was an accomplished artist who worked in the photography department at Delta College and exhibited her work at Adrian College, Central Michigan University and Alma College. The following programs are considered for this award: Art Majors, Electronic Media/Graphic Designs and graduates who completed multiple art classes.

### Business Management Award – Sponsor: Morley Foundation

The Morley Foundation was established in 1948 by Mr. and Mrs. Ralph C. Morley Sr. Morley Companies. The Morley Foundation Award recognizes annually the outstanding Delta graduate in business and business management. The award has been established to recognize academic achievement and good citizenship, thereby demonstrating the business community's concern and appreciation of superior performance. Additionally, it is expected such recognition will encourage other students to strive for success in the area of business. The following programs are considered for this award: Construction Management, Cosmetology Management, Marketing Management, Merchandising Management, Retail Management, Small Business Management, Business Management, and Business Administration.

### Criminal Justice Award – Sponsor: F.O.P. Bay City Lodge 103

The Fraternal Order of Police is the world's largest organization of sworn law enforcement officers, with more than 324,000 members in more than 2,100 lodges. They are the voice of those who dedicate their lives to protecting and serving our communities, and are committed to improving the working conditions of law enforcement officers and the safety of those we serve through education, legislation, information, community involvement, and employee representation. No one knows the dangers and the difficulties faced by today's police officers better than another officer, and no one knows police officers better than the F.O.P.

The following programs are considered for this award: Corrections, Basic Police Training Certification Track, Law Enforcement.

**Education Award – Sponsor: Edward & Kathryn Dunn Langenburg**

Edward and Kathryn (Dunn) Langenburg of Bay City are retired educators, the parents of two children - Scott and Ann-Marie - and the grandparents of six. Mr. Langenburg worked for 31 years as a counselor and administrator for the Bay City Public Schools, and Mrs. Langenburg worked for 32 years as a mathematics teacher for Bangor Township and Bay City Public Schools. Mr. Langenburg received a Bachelor of Arts degree in Education and a Master's degree in Counseling from Central Michigan University. Mrs. Langenburg attended Bay City Junior College and received an Associate's degree from Delta College (graduating during the College's first commencement exercises), a Bachelor of Science degree in Mathematics from Central Michigan University, and a Master's degree in Teaching from Saginaw Valley State University. She is a member of the Delta College Foundation Board of Directors, and believes in giving back to Delta College for scholarship support she received when she was a college student. The following programs are considered for this award: Child Development, Teacher Assistant, Industrial Technology Education, Art Education, Business Education, Elementary Education, Industrial Arts Education, Music Education, Physical Education, Pre-School Education, Secondary Education, and Special Education.

**Engineering & Technology Award – Sponsor: Fred E. Dulmage**

The Fred E. Dulmage Memorial Award annually recognizes the outstanding Delta College graduate in mechanical engineering and technology. It was established to recognize academic achievement and good citizenship thereby demonstrating Delta College's appreciation of superior performance. Additionally, it is expected such recognition will encourage other students to strive for success. The following programs are considered for this Award: Mechanical Engineering Technology, Pre-Engineering.

**English Award – Sponsor: Margaret Timm**

This award was established by Mr. Wesley Timm in memory of his wife Margaret Timm. A Bay City native, Mrs. Timm attended Bay City Public Schools and Bay City Junior College concentrating on foreign languages and graduating in 1931. She continued her studies in foreign languages at the University of Michigan. In 1933, she graduated with a major in Latin, minors in French and German, a K-12 Teaching Certificate and a Phi Beta Kappa key. At Central Michigan and Purdue Universities, she earned two Master degrees in English. When Garber High School opened, she was English Department head and introduced Advanced Placement English. For 30 years, Mrs. Timm emphasized excellence in all her classes as she prepared the students for college and life. At age 80, Margaret retired in 1993. She passed away in 2001. Mr. Timm, a member of the "Committee of 300" (considered to be founders of Delta College), passed away in 2007. The following programs are considered for this award: Journalism and/or emphasis on courses within the English Division. Nominees must submit two writing samples. The English Division faculty will select the award recipient.

**Finance Award – Sponsor: Chemical Bank**

Chemical Financial Corporation (CFC) is the third largest bank holding company in Michigan, operating 129 Chemical Bank offices located throughout Michigan's Lower Peninsula. Chemical Bank understands the people, resources and potential of the communities in which they serve and help to make their communities better now and in the future for their neighbors and families. At Chemical Bank, this "neighbor-helping-neighbor" spirit is important. Programs considered, but not limited to: Accounting.



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**Foreign Language Study Award – Sponsor: Lola Bishop Whitney Recognition**

During her long life from July 13, 1883 until March 26, 1976, Lola Bishop Whitney lived a life which was filled with a spirit of adventure and a commitment which inspired students during her 41 years of teaching. As a dedicated teacher, she inspired students to study, to learn, to explore, and to strive for the best within them. It is hoped that her zest for adventure and learning will be communicated to those who receive awards and recognition from her endowment fund, and that her life will forever be an inspiration for students of all ages. The Lola Bishop Whitney Foreign Language Award was established to encourage and support foreign language study, which was a life-long pursuit for Lola Bishop Whitney, the former language teacher in Bay City. The following programs are considered for this award: Foreign Language majors, International Studies, or students who have demonstrated sustained excellence in foreign language courses over several semesters of study.

**Health Sciences Award –Sponsor: James McIntyre**

The Outstanding Graduate in Health Science Programs Award (except Nursing) was created by James R. McIntyre, a lifetime Saginaw resident and Delta College supporter. Mr. McIntyre was employed by and later owned the McIntyre Funeral Chapel for 45 years, retiring in 2005. He is a Past President of the Saginaw (Downtown) Lions Club, a current member of the West Saginaw Civic Association and Second Vice President of PRIDE in Saginaw. He was named honorary grand marshal of the 2005 PRIDE Christmas Parade. Health Science Programs (except Nursing) considered for this award: Dental Assisting, Dental Hygiene, Diagnostic Medical Sonography, Physical Therapist Assistant, Radiography, Respiratory Care, and Surgical Technology.

**(Applied) Industrial/Technical Award - Sponsor: Gougeon Brothers, Inc.,**

In 1969, Meade Gougeon and his younger brother Jan, who's hometown is Bay City, founded Gougeon Brothers' Boatworks to build iceboats. Gougeon Brothers, Inc. has always been a privately-held company but in 1983, set the ground work to become an employee-owned company. In effect, any Gougeon employee you speak with is a part-owner of the company with a vested interest in keeping customer satisfaction. Gougeon Brothers, Inc. has a mission statement affirming their purpose to provide safe, high-quality, cost-effective products and comprehensive technical information supported by continual research and development. The following programs are considered for this award: HVAC, Fire Science, Refrigeration, Machine Tools, Welding, Skilled Trades, Construction, Manufacturing.

**Life Sciences Award – Sponsor: Julius and Irene Sutto**

The Julius & Irene Sutto Student Award for Life Sciences Endowment has been established by gifts from Mr. Sutto in memory of his wife to honor a top student enrolled in the Life Sciences. Mr. Sutto was a member of the Delta College "Committee of 300", considered to be the College's founders, and was employed with the County of Saginaw as its first controller in 1964 and served on the Saginaw County Board of Commissioners. Mrs. Sutto was the first female elected to the Spaulding Township School Board and the Bridgeport-Spaulding School Board, and served in a number of leadership roles. Delta College's Life Sciences includes: Biology Majors, Pre-Biotechnology, Pre-Dentistry, Pre-Dietetics, Pre-Medical Technology, Pre-Medicine, Pre-Mortuary Science, Pre-Occupational Therapy, Pre-Optometry, Pre- Osteopathy, Pre-Pharmacy, Pre-Physical Therapy, Pre-Veterinary Medicine and related medical fields.



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**Mathematics Award – Sponsor: Jim and Janis Van Tiflin**

This award has been established with a gift from Jim and Janis Van Tiflin. Mr. Van Tiflin is a member of the Delta College Foundation Board of Directors and serves as President of Citizens Bank. Mrs. Van Tiflin is a retired medical librarian. Both were born and raised in Saginaw, graduated from Saints Peter and Paul High School and attended Delta College. The Van Tiflins are grateful for the training they received at Delta. The recipient should have a strong academic record in the mathematics curriculum, with a minimum of 12 credits earned in higher level mathematics (Algebra, Calculus, Geometry, and Statistics).

**Nursing Award – Sponsor: Frances Goll Mills**

This award was established by a gift by the Frances Goll Mills Memorial Fund and recognizes an outstanding graduate in nursing. Mrs. Goll Mills, who passed away in 1982, moved to Saginaw in 1932 from Ohio. She became a well-respected artist in the Mid-Michigan area, having her works displayed at the Detroit Institute of Art, the Saginaw Art Museum and the Saginaw Women's Club. The following programs are considered for this award: Licensed Paramedic to RN, LPN to RN, Nursing, and Pre-Nursing (BSN).

**Office or Administrative Technology – Sponsor: S. C. Johnson Award**

SC Johnson is a family-owned and managed business dedicated to innovative, high-quality products, excellence in the workplace and a long-term commitment to the environment and the communities in which it operates. SC Johnson is one of Bay City's premiere corporate citizens and believes in contributing to the well-being of the countries and communities in which they conduct business. The following programs are considered for this award: Administrative Assistant, Office Services Management, Medical Secretary, and Legal Support Professional.

**Science Award – Sponsor: Dow Chemical Michigan Operations**

This award is sponsored by the Dow Chemical Michigan Operations. Dow Chemical Company is a diversified chemical company that harnesses the power of innovation, science and technology to constantly improve what is essential to human progress. The Company offers a broad range of products and services to customers in more than 175 countries, helping them to provide everything from fresh water, food and pharmaceuticals to paints, packaging and personal care products. Built on a commitment to its principles of sustainability, Dow has annual sales of \$49 billion and employs 43,000 people worldwide. The following programs are considered for this award: Chemical Process Technology, Chemical Technology, Environmental Technology Agriculture, Pre-Biotechnology, Chemistry Majors, Conservation, Forestry, Geography, Geology, Natural Resources, and Water Environmental Technology.

**Social Science Award- Sponsor: Wesley C. Timm**

This award was established in memory of Mr. Timm who was a member of the "Committee of 300", considered to be the founders of Delta College. While he believed strongly in higher education, he was especially proud that nearly two-thirds of Delta's graduates stay in or around the Tri-County area as local residents and tax paying citizens. Mr. Timm was very concerned about the future of the United States, the State of Michigan and the Tri-County area. He had a vision that, in order for the Great Lakes Bay Region (Bay, Midland and Saginaw Counties) to prosper, persons with vision and leadership need to be developed and motivated, and convinced to settle in this area. He believed that Delta College was very capable of training the next generation of leaders for the Great Lakes Bay Region. This award will be presented annually to a student whose performance best shows the potential for future leadership in government, education or business. The student must have taken multiple classes within History, Political Science or Economics, and shall be chosen by a committee consisting of representatives from such disciplines.



**Human Services**



**Section V**

# **Academic Courses**



# Course Information

Courses listed in this section are those which Delta College is approved to offer; however, inclusion of a course does not obligate the College to offer the course in any particular semester or year. Most of the courses listed will be offered at least once during a complete academic year. A Course Guide is published in late February for the Spring/Summer and Fall Semesters, and by late October for the Winter Semester. **Courses in this section, as well as in the Course Guide booklet published each semester, are listed in alphabetical order by department name according to three or four character course numbers.**

## An Example

### Department Area Name

Catalog Number		Course Credits
Course Title		
ACC 211	Principles of Accounting 1	4 Sem Hrs
Prerequisite: MATH LEVEL 4 and READING LEVEL 3 or "B" or higher in ACC 111.		
Introduces basic concepts of accounting principles. Includes the accounting cycle for service and merchandising businesses, internal control, accounting for current assets, long-term assets, current liabilities, and owner's equity. Recommended for transfer (as an alternate to ACC 111 (60-15))		
Course Description		Hours of Instruction (lecture-laboratory)
Course Prerequisite		

## Course Credits

1. Each course is assigned a number of credits which generally indicates the number of hours per week the course meets. Courses with labs and occupational courses, however, generally meet more hours than the number of credits they carry.
2. Tuition rates are assessed on a per-credit-hour basis, and vary depending on your residency classification. Total tuition for each course must be paid at registration time.

## Course Descriptions

1. Below each course number and title, a brief course description is provided. You should read this description carefully to be sure you are qualified to take the course and that the course content meets your needs and interests. If you need additional information, you may contact the Chair of the Division which offers the course or the course instructor.
2. Instructors often give supplemental course information (i.e., course outline, syllabus, tasks and competencies, etc.), during the first week of classes, so students will know specific course procedures, grading criteria, and course objectives. Circumstances such as illness, inclement weather, class composition and size, or the introduction of timely material may necessitate some adjustments. The College recognizes the right of the faculty member to exercise professional judgment in making such adjustments.

## Hours of Instruction

The numbers given within parentheses at the end of each course description indicate the total number of hours each course will be scheduled within a semester. The first number specifies total lecture hours and the second number specifies total laboratory or clinical hours for the course.

## Course Numbering System

All Delta College academic courses have a three to five character course number. The Course Guide booklet, which is published prior to each semester, lists courses in alphabetical order by subject area name according to these course numbers.

1. Courses below 100 are considered developmental and do not meet graduation requirements.
2. Courses within the 100-199 series generally represent freshman-level courses; however, these courses may also be taken by sophomores.
3. Courses within the 200-389 series are intended primarily for sophomores; however, these courses may be taken by freshmen having the necessary prerequisites.
4. Courses within the 290-299 series designate special courses as follows: 291 Independent Study (arranged on an individual basis between student and faculty member; see Independent Study Course Information on the next page); 292-299 Special Topics/Seminars (such courses will be offered as regular courses upon demand or to meet the special needs of some programs, except CED courses).

## Course Designations

Courses designated by an "H" (for Honors), "C" (for courses that require co-registration in another course), and "W" (for Writing), are considered course variations of a regular course and incorporate the same course content. Course variations are considered equal in meeting graduation requirements and prerequisites. Lab courses designated by an "L" are *not* considered a course variation.

## Honors Course Sections

Honors courses incorporate all regular course content with greater emphasis on enrichment and becoming actively involved in the learning process. You learn and apply diverse concepts while stressing creative and critical thinking. You will be expected to be more self-directed with a goal of understanding the theoretical base of the subject matter. Honors courses and Honors Options are designated on your transcript with an "+" designation.

## Course Prerequisites

Prerequisites listed at the beginning of course descriptions are courses which must be taken or skill levels which must be met before enrolling in the course. Skill levels are demonstrated by either assessment scores or course grades according to the following table. Some prerequisites are not computer-enforced, but may be enforced at the discretion of the division.

A Bachelor's Degree from a regionally accredited institution meets prerequisites Reading Level 7 and Writing Level 6. Official transcripts must be provided to the Delta College Registrar's Office.

**Please Note:** The table is used only to define prerequisite levels. Do not rely on the table as an advisement tool. See a counselor or advisor in Counseling/Advising (D102) for assistance with course selection.

## Prerequisite Levels

Level		Assessment Scores View your test scores online at <a href="http://www.delta.edu">www.delta.edu</a> "MyDelta"	OR	Course Grade
READING	Level 1	COMPASS Reading 36-47 or ASSET Reading 30-31	OR	Currently enrolled in ENG 090
	Level 2	COMPASS Reading 48-60 or ASSET Reading 32-34	OR	C or better in ENG 090
	Level 3	COMPASS Reading 61-70 ASSET Reading 35-37	OR	C or better in ENG 098; B or better in ENG 090
	Level 4	COMPASS Reading 71-80 ASSET Reading 38-40	OR	C or better in ENG 108; B or better in ENG 098; B+ or better in ENG 090
	Level 5	COMPASS Reading 81-100 ASSET Reading 41-53 ACT English 20	OR	C or better in ENG 109; B or better in ENG 108; B+ or better in ENG 098; A- or better in ENG 090
	Level 5B	COMPASS Reading 81-100 or ASSET Reading 41-53 or ACT English 20	OR	C or better in OAT 150
	Level 6	Level Attained by Course Completion Only		C or better in any approved College Composition I course
	Level 6B	Level Attained by Course Completion Only		C or better in OAT 151
	Level 7	Level Attained by Course Completion Only or Bachelor's Degree/Regionally Accredited Institution		C or better in an approved College Composition II course or ENG 113 or OAT 152
WRITING	Level 1	COMPASS Writing 16-32 or ASSET Writing 28-31	OR	Currently enrolled in ENG 090
	Level 2	COMPASS Writing 33-37 or ASSET Writing 32-34	OR	C or better in ENG 090
	Level 3	COMPASS Writing 38-69 or ASSET Writing 35-54	OR	C or better in ENG 109; B or better in ENG 108; B+ or better in ENG 098; A- or better in ENG 090
	Level 4	COMPASS Writing 70-100 or ASSET Writing 35-54 or ACT English 20		C+ or better in ENG 109; B+ or better in ENG 108; A- or better in ENG 098; A in ENG 090
	Level 4B	COMPASS Writing 70-100 or ASSET Writing 35-54 or ACT English 20	OR	C or better in OAT 150
	Level 5	Level Attained by Course Completion Only		C or better in any approved College Composition I course
	Level 5B	Level Attained by Course Completion Only		C or better in OAT 151
	Level 6	Level Attained by Course Completion Only or Bachelor's Degree/Regionally Accredited Institution		C or better in an approved College Composition II course or ENG 113 or OAT 152
A math course which has been successfully completed more than four years from the start date of the intended class cannot be used to fulfill the prerequisite. Demonstrated math prerequisite knowledge may be needed for enrollment in selected math class.				
MATH	Level 1	COMPASS Numerical/Pre-Algebra 18-43 or ASSET Numerical/Pre-Algebra 28-40	OR	Currently enrolled in MTH 092
	Level 2	COMPASS Numerical/Pre-Algebra 44-100 or ASSET Numerical/Pre-Algebra 41-55	OR	C or better in MTH 092
	Level 3	COMPASS Elementary Algebra 13-40 or ASSET Elementary Algebra 28-37	OR	C or better in MTH 096
	Level 4	Level attained by course completion or by attaining assessment score to meet Math Level 5 or higher.	OR	C or better in MTH 097
	Level 5	COMPASS Elementary/Intermediate Algebra 41-70 ASSET Elementary Algebra 38-55/Intermediate Algebra 31-44 or ACT 19	OR	B- or better in MTH 097
	Level 6	COMPASS Intermediate Algebra 71-100 or ASSET Intermediate Algebra 45-55	OR	C or better in MTH 119/119A

## eLearning

We're going the distance... so you don't have to.

Students today require learning flexibility...and Delta College is committed to providing you with learning options that fit into your busy life style. The Internet, Virtual Classrooms, and other technologies are making college degrees attainable through eLearning.

The advantages of eLearning courses are convenience and flexibility – not simplicity. Students must be highly motivated and disciplined to be successful in an eLearning course. Successful students communicate with their instructors regularly. Students are highly encouraged to access their virtual course sites and contact their instructors on the start date of the semester.

eLearning course options are published each semester in the Course Planning Guide. If you would like to learn more, contact the eLearning Office at 989-686-9088 or by e-mail at [elearning@delta.edu](mailto:elearning@delta.edu)

Delta College eLearning Course Options:

- **Internet Courses (INET)** - An Internet course is a course designed to deliver 100% of the course material/content, assessments and required online interactive discussions between professor-to-student(s), student-to-professor or student-to-student(s) exclusively through the Internet by a qualified Internet professor. Any assessments requiring proctoring can be conducted at the Delta College Academic Testing Center or any approved off campus sites. Instructors may offer optional face-to-face orientations for students who choose to attend. Some Internet courses may require an additional content fee for access to required online course content.
- **Blended Courses (CNET)** – A Blended course requires both Internet and traditional face-to-face meeting times. The distribution of course material assessments and interactions between professor-to-student(s), student-to-professor, or student-to-student(s) are delivered in a combination of both Internet and face-to-face meeting times that is to be determined by the professor. The syllabus will list the dates for required face-to-face meetings or the instructor will inform the class at the first session according to the date listed on your student schedule. Testing can be done online or in the classroom. Information will be provided in the college syllabus or stated by the instructor.

eLearning courses are not easier and may not be the best learning option for every student.

Michigan Community College Virtual Learning Collaborative (MCCVLC) is a collaboration between Michigan community colleges that allow Delta College students to take eLearning courses from other community colleges in Michigan. If a specific course is not available at Delta College, you may find comparable courses through the MCCVLC at [www.mccvlc.org](http://www.mccvlc.org). Check with your counselor to make sure the course credit will transfer back to Delta College.



**On the Web:** [www.delta.edu/elearning](http://www.delta.edu/elearning)

## International Travel/Study Courses

Delta College offers international travel/study courses on an annual basis. These courses are usually offered for four credits which include a combination of lecture and field experience in group international travel; however, since the length of travel time may vary from one to four weeks, the Curriculum Council has approved variable credit, depending on the length of the travel field experience. Consequently, travel/study courses may vary in credits from a minimum of one to a maximum of four. These courses are numbered 268 and may be taken in various disciplines; i.e., BIO 268, ECN 268, SOC 268. The specific country/region of focus will be listed after the course number and title (SOC 268 International Studies: Australia). You may register for only one travel/study course per trip. You should consult a counselor regarding the transferability of total credits earned through international study and travel.

## Learning Community Courses

Learning community courses are courses in which:

1. Disciplines are taught together (for example, literature with history, calculus with physics, criminal justice with psychology) so that the connections between them are clear.
2. You can work with other students on activities and projects.
3. You can interact with other students and teachers and be part of a closely-knit, supportive community of learners.
4. You may experience a variety of learning modes such as participating in large and small group discussions, working on activities and projects, taking field trips, and hearing lectures.
5. Students and teachers work closely together, contributing what they already know and seeking new knowledge.
6. You get to express your thoughts and ideas and to hear those of your fellow students.
7. You can gain self-confidence about yourself as a student, a thinker, a reader, a writer, a speaker, a listener.

These courses usually combine two or more different disciplines or areas in order to show the connections between them. They are taught by at least two instructors, each from the different disciplines or areas included in the course. Each semester, Delta College publishes a complete list of learning community courses in the Course Guide booklet.

## Independent Study Course Information

Independent Study refers to enrollment in an appropriately-designated, variable-credit course for a specific plan of study, authorized and supervised by a consenting faculty member. Independent Study is not a substitute for regular courses, but an enrichment opportunity. Normally, it is a project designated to allow you to investigate an area of interest not within the scope of a regular course, to probe more in depth than is possible in a regular course, or to obtain an educational experience outside that normally offered by a regular course.

Guidelines for an Independent Study course are:

1. **Proposals:** The Independent Study project is normally student-initiated. Early interaction with faculty is essential in the development of a mutually-acceptable project description. At a minimum, such a description should contain an outline of the study topic, specification of the work to be done and the materials to be read, the credit to be given, the type and frequency of faculty-student contacts, and a statement of the evaluative criteria to be used by the faculty member.
2. **Approval Process:** The faculty member must accept and approve the project and then submit the agreed-upon proposal on the appropriate form to the Department Chair for approval. The granting of approval by the Department Chair may involve considerations, such as faculty workload, which go beyond the merits of the project. If the Chair approves, information copies of the form are then submitted to the Academic Dean and Registrar's. The student may register for the project after the authorization form is received by Registrar's.
3. **Responsibility:** Independent Study is basically a tutorial process, necessarily involving substantial faculty participation. Students are on their own when pursuing an Independent Study, because it involves no class meetings or formal lectures. The faculty member is the responsible custodian of the project, obliged to provide guidance, assistance, criticism, suggestion, and evaluation.
4. **Variable Credit:** With faculty approval, credit may vary from one to six credits.

# Course Abbreviations



Courses in this section, as well as those in the Academic Course Guide booklet published each semester, are listed in alphabetical order by department areas.

The department area abbreviation appears on students' official transcripts.

Abbreviation	Department Area	Page
ABS	Applied Behavioral Studies	126
ACC	Accounting	126
ACE	Academic Career Experience (also see CED)	127
AFT	Aviation Flight Technology	129
AGM	Auto Service Education Program (ASEP)	130
ARC	Architectural Technology	131
ART	Art	131
ASL	American Sign Language	133
AST	Astronomy	134
AUT	Automotive Service	134
BIO	Biology	135
CAD	Computer Aided Drafting	137
CD	Child Development	137
CED	Cooperative Education (also see ACE)	138
CHM	Chemistry	139
CJ	Criminal Justice	141
CNA	Certified Nursing Assistant	142
CNC	Computer Numerical Control	142
COM	Communication	143
CPI	Chemical Process Industries	144
CST	Computer Science & Information Technology	144
CT	Chemical Technology	148
DA	Dental Assisting	148
DH	Dental Hygiene	149
DMS	Diagnostic Medical Sonography	150
DRF	Drafting	151
ECN	Economics	152
ED	Education	152
EDD	Electronic Distribution Design	154
EET	Electronic Engineering Technology	154
EGR	Engineering	154
EM	Electronic Media	155
EMB	Electronic Media Broadcasting	155
EMS	Emergency Medical Service	156
ENG	English	156
ENT	Entrepreneurship	158
ENV	Environmental Science	158
ET	Electrical Technology	159
FR	French	159
FST	Fire Science Technology	160
GE	German	162
GEO	Geography	162
GLG	Geology	163
HIS	History	164
HSC	Health Science	165

Abbreviation	Department Area	165
ID	Interior Design	165
IHU	Interdisciplinary Humanities	166
	Interdisciplinary Science (see SCI)	167
ITE	Industrial Technology Education	167
LEA	Leisure Activity	167
LIB	Library Skills	167
LIT	Literature	167
LSP	Legal Support Professional	169
LW	Lifelong Wellness	170
LWA	Lifelong Wellness Activity	170
LWT	Lifelong Wellness Theory	172
MGT	Management	173
MIT	Manufacturing & Industrial Technology	175
MS	Machine Tool Operations	175
MT	Mechanical Technology	175
MTH	Mathematics	176
MTP	Massage Therapy	178
MUS	Music	178
NPT	Nursing (RN) Part-time	179
NT	Nursing Transition (PN or Paramedic to RN)	180
NUR	Nursing (RN) Full-time	181
OAT	Office Administration & Technology	183
PHL	Philosophy	184
PHM	Pharmacology	186
	Photography (see Art)	131
PHY	Physics	186
PNE	Practical Nursing Education	186
POL	Political Science	187
PSC	Physical Science	188
PSY	Psychology	188
PTA	Physical Therapist Assistant	189
QA	Quality Assurance	191
RAD	Radiography	192
RC	Residential Construction	193
RHA	Refrigeration/Heating & Air Conditioning	193
RT	Respiratory Care	194
SCI	Interdisciplinary Science	196
	Sign Language (American) - (Sec ASL)	133
SK--	Skilled Trades	196
SOC	Sociology	201
	Sonography, Diagnostic Medical (see DMS)	150
SPA	Spanish	202
	Speech (See COM)	143
SSI	Social Science Interdisciplinary	203
ST	Surgical Technology	203
TTI	Technical Trades Interdisciplinary	204
WELD	Welding Engineering Technology	204
WET	Water Environment Technology	205
WTT	Wind Turbine Technology	206



# Course Descriptions

## Applied Behavior Studies

### **ABS 090A Successful Transitions A 1 Sem Hr**

Explores internal and external factors that affect college success. Examines the knowledge, attitudes and skills needed to increase self-awareness and confidence; self regulation and responsibility; motivation and productive personal goals. Develops knowledge in creating effective habits in a supportive, student-centered class, and increases competence in effectively interacting with others. Does not earn credit toward graduation. Recommended for students needing or taking ENG 090, ENG 107, or ENG 108 and students who realize a need for further self-development.(15-0)

### **ABS 090B Successful Transitions B 1 Sem Hr**

Prerequisite: ABS090A. Encourages student-oriented discussion, practice and application of personal and social success skills learned in ABS 090A. Focuses on time management, assertive communication, peer interaction and support, problem solving, collaboration, and cooperation. Does not earn credit toward graduation. Recommended for students needing or taking ENG 090, ENG 098, ENG 107, ENG 108, or ENG 109 and students who recognize their need to continue to increase their strategies for college success. (15-0)

### **ABS 096 Resources and Responsibilities: The College's and Yours 2 Sem Hrs**

Must be taken concurrently with ABS 100W except when ABS 100W has already been successfully completed with a grade of "C" or better. Increases ability to meet college expectations in a supportive, student-centered class. Introduces and uses multiple College resources and services (such as the Library, Teaching/Learning Center, Career Center, Counseling and Advising, Educator, college website). Assists in assessing and exploring individual strengths and weaknesses. Introduces and uses strategies to increase confidence, motivation, discipline and self-responsibility. Increases knowledge and use of effective communication and teamwork skills and writing-to-learn strategies. Recommended for students with a combined minimum COMPASS reading/writing score of 65 and for students enrolled in ENG 090, 098, 108 or 109, as well as for students who have been away from formal schooling for a number of years. (30-0)

### **ABS 100 Building Academic Success 2 Sem Hrs**

Must be taken concurrently with ABS 096 except when ABS 096 has already been successfully completed with a grade of "C" or better. Illustrates techniques for becoming an active learner. Assists students in exploring and using various time management tools; note taking styles; test preparation and test taking techniques; active textbook reading and review strategies; memory techniques; personal learning style characteristics and writing-to-learn strategies. Assists in assessing student's emotional intelligence and ability to handle the stressors of college with a focus on test anxiety and procrastination. Credit can be earned toward graduation and/or transfer in only one of the following classes: ABS 100W, ABS 108A, ABS 108, or ABS 292. (30-0)

### **ABS 102 The Job Hunt 1 Sem Hr**

Develops skills in identifying students' job-related abilities and attitudes; locating leads in the job market; writing resumes and cover letters; completing applications and interviewing. (15-0)

### **ABS 103 Career Decision Making 1 Sem Hr**

Prerequisite: READING LEVEL 3. Focuses on the steps in the career decision making process. Investigates personal values, skills, interests and abilities and explores a variety of careers using campus resources. Matches your personal characteristics with careers and creates a plan of action to accomplish your short and long range career goals while working in a cooperative, respectful group atmosphere. (15-0)

### **ABS 104 Behavior Change I 1 Sem Hr**

Assists students in identifying, examining, and changing their self-limiting thoughts, attitudes, and behaviors. Examines the socialization process and the development of the social self, as they apply to personal, and individual change. Develops a plan for change. (15-0)

### **ABS 105 Behavior Change II 1 Sem Hr**

Prerequisite: ABS 104. Applies the Take Charge Theory to students, to others and to situations primarily through group activities. Reviews the American Socialization Process, explores social behavioral theories as they apply to personal change and growth, and practices the process of Creative Mental Imagery. (15-0)

### **ABS 108A Becoming a Master Student/Plus Practice 3 Sem Hrs**

Combines the goals of ABS 108 with additional time for individual attention to student needs in using study and life skills practice. Recommended for students who want or need additional practice and instructor feedback or who are coming back to school after an extended absence and whose assessment scores indicate skills in ENG 111A range. Credit may be earned in only one of the following: ABS 101, ABS 108 or ABS 108A or ABS 292. (45-0)

### **ABS 108 Becoming A Master Student 2 Sem Hrs**

Assists students in obtaining skills critical to their college success. Demonstrates and practices strategies in test taking, note taking, memory, textbook reading, and thinking critically. Identifies and explores college resources and life skills related to college success, such as personal responsibility; relationship building; health, time and stress management. Recommended for students with average or above average academic skills and high motivation whose assessment scores indicate skills in the ENG 111 range. Credit may be earned in only one of the following: ABS 101, ABS 108, ABS 108A or ABS 292. (30-0)

### **ABS 111 College Expectations and You 1 Sem Hr**

Prerequisite: Reading or Writing Level 3. Explores information needed to make a successful transition to college level expectations for learning and success. Examines effective personal attributes, available college resources, and general expectations of college professors and courses. Assists in the creation of a personal plan of action for reaching college goals using information from the course. (15-0)

### **ABS 113 Career Decision Making for Adults in Transition 1 Sem Hr**

Prerequisite: READING LEVEL 3. Explores the results of and opportunities available for adults in career transitions. Provides experience in the steps involved in the career decision-making process through students working in a cooperative, respectful group atmosphere. Investigates personal values, skills, interests and abilities and explores a variety of careers using campus resources. Matches the student's personal characteristics with careers and creates a plan of action to accomplish short and long range career goals.(15-0)

### **ABS 290-299 Special Projects in Applied Behavioral Science**

## Accounting

### **ACC 111 Introductory Accounting 4 Sem Hrs**

Practices basic accounting procedures including journalizing, posting, preparation of financial statements, special journals, subsidiary ledgers, petty cash fund, bank reconciliation, and payroll accounting. Requires completion of a practice set. Transfer students should take ACC 211. Not recommended to take ACC 111 if credit has already been earned in ACC 211.(60-0).

<b>ACC 211</b>	<b>Principles of Accounting I</b>	<b>4 Sem Hrs</b>
Prerequisite: MATH LEVEL 4 and READING LEVEL 3 or "B" or higher in ACC 111. Introduces basic concepts of accounting principles. Includes the accounting cycle for service and merchandising businesses, internal control, accounting for current assets, long-term assets, current liabilities, and owner's equity. Recommended for transfer (as an alternative to ACC 111). (60-15)		
<b>ACC 212</b>	<b>Principles of Accounting II</b>	<b>4 Sem Hrs</b>
Prerequisite: ACC 211 with a C (2.0) minimum grade. Includes a study of corporation basic theory and methodology, statement of cash flows, accounting for manufacturing operations, and accounting data as used in performance measurement, decision making, planning, and control. (60-15)		
<b>ACC 214</b>	<b>Microcomputer Accounting Applications</b>	<b>4 Sem Hrs</b>
Prerequisite: CST 133 with a "C" or better and ACC 211 with a "C" or better. Introduces microcomputer applications in general ledger, accounts receivable, accounts payable, payroll, and inventory/invoicing. Develops electronic spreadsheet applications using appropriate software. Outside laboratory assignments are required. (60-0)		
<b>ACC 215</b>	<b>Federal Tax Accounting</b>	<b>3 Sem Hrs</b>
Prerequisite: ACC 212. Studies the Federal income tax law. Emphasizes core income tax principles and relates them to individual and business entity applications. Includes preparation of individual and business entity tax returns. (45-0)		
<b>ACC 227</b>	<b>Intermediate Accounting I</b>	<b>4 Sem Hrs</b>
Prerequisite: ACC 212 with a "C" (2.0) minimum grade or equivalent. Includes a study of accounting processes, theory, and principles. Includes financial statement presentation, revenue recognition, evaluation of current assets, property plant and equipment, intangible assets, and time value of money. Designed for transfer. (60-0)		
<b>ACC 228</b>	<b>Intermediate Accounting II</b>	<b>4 Sem Hrs</b>
Prerequisite: ACC 212 with a "C" (2.0) minimum grade or equivalent. Presents accounting for current liabilities, stockholders' equity, EPS, income taxes, pensions, leases, long-term liabilities, and the statement of cash flows. Designed for transfer. (60-0)		
<b>ACC 233</b>	<b>Cost Accounting</b>	<b>3 Sem Hrs</b>
Prerequisite: ACC 212 with a C (2.0) minimum grade. Relates principles and methods of handling materials, labor costs, and manufacturing expenses to the formulation of reports to management. Includes job order, process, standard, direct and budgetary costing procedures. (45-0)		
<b>ACC 235</b>	<b>Financial Management</b>	<b>3 Sem Hrs</b>
Prerequisite: ACC 212 with a C (2.0) minimum. An introduction to the basic concepts of financial management. Includes goals and functions of financial management, financial forecasting, leverage, working capital management, time value of money, stock and bond valuation, cost of capital, capital budgeting, and concept of risk. (45-0)		
<b>ACC 285</b>	<b>Professional Accounting Careers</b>	<b>2 Sem Hrs</b>
Prerequisite: ACC 214, and ACC 227 or ACC 228 all with a minimum C grade or permission of instructor. Recommended to be taken in the last semester of a student's accounting program. Includes development of a career portfolio to illustrate professionalism and accounting skills. Uses technology to research and analyze topics including accounting careers, certifications, and job search preparation, as well as issues related to current accounting topics. (30-0)		
<b>ACC 290-299</b>	<b>Special Projects in Accounting</b>	<b>Sem Hr</b>

## Academic Career Experience

<b>ACE 105</b>	<b>Year I Experience I - Business &amp; Human Services</b>	<b>3 Sem Hrs</b>
Prerequisites: (1) Majoring in business, computer & information sciences, administrative support, social & human services, public safety services, media production, or similar program of study, (2) Employed in a major-related position, and (3) Completed the program application process in the Office of Academic Career Experience (Cooperative Education) and Experiential Learning. Introduces course planning and goal setting. Provides opportunities for team building. Introduces electronic portfolio to manage academic and career information. Emphasizes the necessity of maintaining this living collection of credentials. Evaluates the student in a program-related, supervised worksite. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (15-180)		
<b>ACE 106</b>	<b>Year I Experience II - Business &amp; Human Services</b>	<b>3 Sem Hrs</b>
Prerequisites: (1) ACE 105 with a grade of B or better, (2) Majoring in business, computer & information sciences, administrative support, social & human services, public safety services, media production or similar program of study, and (3) Employed in major-related position. Continues from Year I Experience I with additional responsibilities at the worksite. Explores work cultures and diversity. Includes development of professional written employment application materials. Continues development of electronic portfolio. Practices and develops soft skills necessary in the workplace. The employer/site supervisor and the college coordinator make evaluations. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (15-180)		
<b>ACE 110</b>	<b>Year I Experience I - Communications &amp; Sciences</b>	<b>3 Sem Hrs</b>
Prerequisites: (1) Majoring in communications, social sciences, science, or similar program of study, (2) Employed in a major-related position, and (3) Completed the program application process in the Office of Academic Career Experience (Cooperative Education) and Experiential Learning. Introduces course planning and goal setting. Provides opportunities for team building. Introduces electronic portfolio to manage academic and career information. Emphasizes the necessity of maintaining this living collection of credentials. Evaluates the student in a program-related, supervised worksite. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (15-180)		
<b>ACE 111</b>	<b>Year I Experience II - Communications &amp; Sciences</b>	<b>3 Sem Hrs</b>
Prerequisites: (1) ACE 110 with a grade of B or better, (2) Majoring in communications, social sciences, science, or similar program of study, and (3) Employed in major-related position. Continues from Year I Experience I with additional responsibilities at the worksite. Explores work cultures and diversity. Includes development of professional written employment application materials. Continues development of electronic portfolio. Practices and develops soft skills necessary in the workplace. The employer/site supervisor and the college coordinator make evaluations. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (15-180)		

**ACE 115      Year I Experience I - Health Science      3 Sem Hrs**

Prerequisites: (1) Majoring in nursing, dental/diagnostic/therapeutic technologies, or similar program of study, (2) Employed in a major-related position, and (3) Completed the program application process in the Office of Academic Career Experience (Cooperative Education) and Experiential Learning. Introduces course planning and goal setting. Provides opportunities for team building. Introduces electronic portfolio to manage academic and career information. Emphasizes the necessity of maintaining this living collection of credentials. Evaluates the student in a program-related, supervised worksite. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (15-180)

**ACE 116      Year I Experience II - Health Science      3 Sem Hrs**

Prerequisites: (1) ACE 115 with a grade of B or better, (2) Majoring in nursing, dental/diagnostic/therapeutic technologies, or similar program of study, and (3) Employed in major-related position. Continues from Year I Experience I with additional responsibilities at the worksite. Explores work cultures and diversity. Includes development of professional written employment application materials. Continues development of electronic portfolio. Practices and develops soft skills necessary in the workplace. The employer/site supervisor and the college coordinator make evaluations. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (15-180)

**ACE 120      Year I Experience I - Technical & Industrial      3 Sem Hrs**

Prerequisites: (1) Majoring in design technologies, mechanical trades/services, construction/electric trades, or similar program of study, (2) Employed in a major-related position, and (3) Completed the program application process in the Office of Academic Career Experience (Cooperative Education) and Experiential Learning. Introduces course planning and goal setting. Provides opportunities for team building. Introduces electronic portfolio to manage academic and career information. Emphasizes the necessity of maintaining this living collection of credentials. Evaluates the student in a program-related, supervised worksite. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (15-180)

**ACE 121      Year I Experience II - Technical & Industrial      3 Sem Hrs**

Prerequisites: (1) ACE 120 with a grade of B or better, (2) Majoring in design technologies, mechanical trades/services, construction/electric trades, or similar program of study, and (3) Employed in major-related position. Continues from Year I Experience I with additional responsibilities at the worksite. Explores work cultures and diversity. Includes development of professional written employment application materials. Continues development of electronic portfolio. Practices and develops soft skills necessary in the workplace. The employer/site supervisor and the college coordinator make evaluations. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (15-180)

**ACE 205      Year II Experience I - Business & Human Services      2 Sem Hrs**

Prerequisites: (1) ACE 106 with a grade of B or better, (2) Majoring in business, computer & information sciences, administrative support, social & human services, media production or similar program of study, and (3) Employed in a major-related position. Continues from Year I Experience II with additional responsibilities at the worksite. Provides further opportunity to produce and exchange professional communications and demonstrate continuous improvement in professional skill sets. Continues development of electronic portfolio. The employer/site supervisor and the college coordinator make evaluations. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (7.5 - 180)

**ACE 206      Year II Experience II - Business & Human Services      2 Sem Hrs**

Prerequisites: (1) ACE 205 with a grade of B or better, (2) Majoring in business, computer & information sciences, administrative support, social & human services, public safety services, media production or similar program of study, and (3) Employed in a major-related position. Continues from Year II Experience I with additional responsibilities at the worksite. Provides further opportunity to practice and exchange professional communications and demonstrate continuous improvement in professional skill sets. Continues development of electronic portfolio. The employer/site supervisor and the college coordinator make evaluations. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (7.5 - 180)

**ACE 210      Year II Experience I - Communications & Sciences      2 Sem Hrs**

Prerequisites: (1) ACE 111 with a grade of B or better, (2) Majoring in communications, social sciences, science, or similar program of study, and (3) Employed in a major-related position. Continues from Year I Experience II with additional responsibilities at the worksite. Provides further opportunity to produce and exchange professional communications and demonstrate continuous improvement in professional skill sets. Continues development of electronic portfolio. The employer/site supervisor and the college coordinator make evaluations. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (7.5 - 180)

**ACE 211      Year II Experience II - Communications & Sciences      2 Sem Hrs**

Prerequisites: (1) ACE 210 with a grade of B or better, (2) Majoring in communications, social sciences, science, or similar program of study, and (3) Employed in a major-related position. Continues from Year II Experience I with additional responsibilities at the worksite. Provides further opportunity to practice and exchange professional communications and demonstrate continuous improvement in professional skill sets. Continues development of electronic portfolio. The employer/site supervisor and the college coordinator make evaluations. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (7.5 - 180)

**ACE 215      Year II Experience I - Health Science      2 Sem Hrs**

Prerequisites: (1) ACE 116 with a grade of B or better, (2) Majoring in nursing, dental/diagnostic/therapeutic technologies or similar program of study, and (3) Employed in a major-related position. Continues from Year I Experience II with additional responsibilities at the worksite. Provides further opportunity to produce and exchange professional communications and demonstrate continuous improvement in professional skill sets. Continues development of electronic portfolio. The employer/site supervisor and the college coordinator make evaluations. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (7.5 - 180)

**ACE 216      Year II Experience II - Health Science      2 Sem Hrs**

Prerequisites: (1) ACE 215 with a grade of B or better, (2) Majoring in nursing, dental/diagnostic/therapeutic technologies or similar program of study, and (3) Employed in a major-related position. Continues from Year II Experience I with additional responsibilities at the worksite. Provides further opportunity to practice and exchange professional communications and demonstrate continuous improvement in professional skill sets. Continues development of electronic portfolio. The employer/site supervisor and the college coordinator make evaluations. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (7.5 - 180)

**ACE 220      Year II Experience I - Technical & Industrial      2 Sem Hrs**

Prerequisites: (1) ACE 121 with a grade of B or better, (2) Majoring in design technologies, mechanical trades/services, construction/electric trades, or similar program of study, and (3) Employed in a major-related position. Continues from Year I Experience II with additional responsibilities at the worksite. Provides further opportunity to produce and exchange professional communications and demonstrate continuous improvement in professional skill sets. Continues development of electronic portfolio. The employer/site supervisor and the college coordinator make evaluations. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (7.5 - 180)

**ACE 221      Year II Experience II - Technical & Industrial      2 Sem Hrs**

Prerequisites: (1) ACE 220 with a grade of B or better, (2) Majoring in design technologies, mechanical trades/services, construction/electric trades, or similar program of study, and (3) Employed in a major-related position. Continues from Year II Experience I with additional responsibilities at the worksite. Provides further opportunity to practice and exchange professional communications and demonstrate continuous improvement in professional skill sets. Continues development of electronic portfolio. The employer/site supervisor and the college coordinator make evaluations. For successful completion, a grade of at least a B must be earned in both this course and its associated work experience. A final grade of F will be assigned in both course and work experience if either is not successfully completed. (7.5 - 180)

**ACE 280      Internship: Technology Management      1 Sem Hr**

Prerequisites: (1) Majoring in construction management, industrial supervision, manufacturing industrial technology, or lean manufacturing, (2) employed in a major-related placement, and (3) completed the program application process in the Office of Academic Career Experience (Cooperative Education) and Experiential Learning. Integrates, reinforces, and documents the student's academic studies with related career experience of at least 180 hours at an approved worksite. Evaluations are made by the employer/site supervisor and the college coordinator. (0-180)

**ACE 285      Internship: Design Technology      1 Sem Hr**

Prerequisites: (1) Majoring in architectural technology, CAD, residential construction, RHA, CNC technology, mechanical engineering technology, machine tool, manufacturing/welding engineering technology or similar program of study, (2) employed in a major-related placement, and (3) completed the program application process in the Office of Academic Career Experience (Cooperative Education) and Experiential Learning. Integrates, reinforces, and documents the student's academic studies with related career experience of at least 180 hours at an approved worksite. Evaluations are made by the employer/site supervisor and the college coordinator. (0 - 180)

**ACE 290-299      Special Projects in Academic Career Experience**

**Aviation Flight Technology**

**AFT 101      Private Pilot Ground Training      4 Sem Hrs**

Provides the basic principles of the aeronautical knowledge necessary to meet the requirements for a Private Pilot - Airplane Knowledge Exam. Includes principles of aerodynamics, airplane performance, airplane instruments, engines, and systems, airports and Air Traffic Control, weight and balance calculations, weather, Federal Aviation Regulations, aeronautical navigation charts and navigation, and principles of flight physiology. (60-0)

**AFT 105      Primary Pilot Flight Training I      2 Sem Hrs**

Prerequisite: Completion of or concurrent enrollment in AFT 101 and coordinator permission. Provides knowledge, skills, and aeronautical experience necessary to meet the requirements for solo flight. Includes flight training for the following procedures and maneuvers: proper flight preparations procedures, taxiing or surface operations, takeoffs and landings, straight-and-level flight and turns, climbs and climbing turns, airport traffic patterns, collision avoidance, windshear avoidance, and wake turbulence avoidance, descents, flight at various airspeeds, stall entries from various flight attitudes and power combinations, emergency procedures, ground reference maneuvers, approaches to a landing area with simulated engine malfunctions, slips to a landing, and go-arounds. A written exam must be completed and reviewed by the instructor before authorization to conduct a solo flight can be given. Special fees for flight instruction and aircraft rental must be paid by students. (20-50)

**AFT 106      Primary Pilot Flight Training II      3 Sem Hrs**

Prerequisite: AFT 105 with a "C" (2.0) minimum grade and coordinator permission. Provides knowledge, skills, and aeronautical experience necessary to meet the requirements for the FAA Practical Test Standards-Private Pilot Airplane Single-engine land. Includes pilotage and dead reckoning, navigation systems and radar services, diversions, and lost procedures, and cross-country flights, night preparation, night takeoffs and landings, and night cross-country flight and high performance takeoffs and landings. (20-25)

**AFT 201      Instrument Pilot Ground Training      4 Sem Hrs**

Prerequisite: AFT 101 or equivalent and coordinator permission. Prepares students for Federal Aviation Administration Instrument-Rating-Airplane knowledge test leading to the addition of an instrument rating to a Private or Commercial Pilot Airman Certificate. Emphasizes airplane instruments, air traffic control, Federal Aviation Regulations, instrument flight operations, en route and approach charts, and IFR trip planning and navigation, aviation weather, and flight physiology. (60-0)

**AFT 202      Aviation Meteorology      2 Sem Hrs**

Focuses on fundamental weather processes impacting aviation. Includes sources for weather data important for flight planning including text observations and forecasts, graphical charts and analyses, and radar. Emphasizes weather-related hazards to aviation including thunderstorms. (30-0)

**AFT 210 Commercial Pilot Ground Training 4 Sem Hrs**

Prerequisite: AFT 101 with a "C" (2.0) grade minimum or equivalent and coordinator permission. Prepares students for Federal Aviation Administration Commercial Pilot knowledge test required for a Commercial Pilot Airman Certificate. Includes airplanes and aerodynamics, airplane performance, aircraft instruments, engines and systems, airports, airspace and Air Traffic Control, weight and balance computations, meteorology, Federal Aviation Regulations, navigation, flight physiology, and commercial flight operations. (60-0)

**AFT 215 Advanced Pilot Flight Training I 2 Sem Hrs**

Prerequisite: AFT 106 with a "C" (2.0) minimum grade, previous or concurrent enrollment in AFT 201 and coordinator permission. Provides student with a foundation in attitude instrument flight and instrument navigation. Prepares student for introduction of Instrument Flight Rules (IFR) enroute procedures by performing simulated instrument approaches and holding patterns. Special fees for flight instruction and aircraft rental must be paid by students. (30-26)

**AFT 216 Advanced Pilot Flight Training II 3 Sem Hrs**

Prerequisite: AFT 215 with a "C" (2.0) minimum grade and coordinator permission. Provides instruction in Instrument Flight Rules (IFR) enroute procedures with Air Traffic Control to attain proficiency level of Instrument Rated Pilot. Provides knowledge, skills, and aeronautical experience necessary to meet the requirements for the FAA Practical Test Standards - Instrument Pilot Airplane. Special fees for flight instruction and aircraft rental must be paid by students. (25-20)

**AFT 217 Advanced Pilot Flight Training III 2 Sem Hrs**

Prerequisite: AFT 106 with a "C" (2.0) minimum grade and coordinator permission. Includes extensive review and practice in Visual Flight Rules (VFR) cross-country procedures and maximum performance maneuvers. Special fees for flight instruction and aircraft rental must be paid by students. (35-34)

**AFT 218 Advanced Pilot Flight Training IV 3 Sem Hrs**

Prerequisite: AFT 217 with a "C" (2.0) minimum grade and coordinator permission. Develops night orientation, night cross-country procedures, complex airplane operations and precision flight maneuvers to Commercial Pilot standards. Provides knowledge, skills, and aeronautical experience necessary to meet the requirements for the FAA Practical Test Standards - Commercial Pilot Airplane. Special fees for flight instruction and aircraft rental must be paid by students. (25-25)

**AFT 290-299 Special Projects in Aviation****Auto Service Education ASEP****AGM 110 Automotive Electronics Service 4 Sem Hrs**

Introduces the operation, maintenance, and service of battery, charging, starting systems and GM electrical and electronic systems. Credit may be earned in AGM 110 or ACD 110 or SKGM 110 or AGM 131 but not in more than one. (40-40)

**AGM 112 Engine Service 6 Sem Hrs**

Introduces the operation, maintenance, and service of GM engines for mechanical performance. Stresses proper repair techniques and diagnosis of engine noises. Credit may be earned in AGM 112 or ACD 112 or SKGM 112 or AGM 141 but not in more than one. (45-75)

**AGM 114 Brakes, ABS, TCS Service 5 Sem Hrs**

Introduces the operation, maintenance, and service of GM base brakes, anti-lock and traction control. Presents general auto lab equipment operation and stresses safety. Credit may be earned in AGM 114 or ACD 114 or SKGM 114 or AGM 132 but not in more than one. (40-60)

**AGM 134 Dealership Work Experience I 2 Sem Hrs**

Provides work experience in the operation, maintenance, and service of GM base brakes, engine mechanical and electrical systems particularly battery, charging and starting systems. Stresses general auto lab equipment operation and safety. Credit may be earned in AGM 134 or ACD 134 but not in both. (6-600)

**AGM 142 Electronic Engine and Emission Controls Service 9 Sem Hrs**

Prerequisite: AGM 112. Introduces the operation, maintenance, and service of GM engines for drivability performance. Stresses proper repair techniques and diagnosis of engine drivability problems. Credit may be earned in AGM 142 or SKGM 142 or ACD 142 but not in more than one. (81-144)

**AGM 143 Dealership Work Experience II 2 Sem Hrs**

Prerequisite: AGM 134. Provides work experience in the operation, maintenance, and service of GM steering/suspension and drivability performance. Stresses basic spark, fuel, and emission control systems. (6-600)

**AGM 210 Body Electronics Service 3 Sem Hrs**

Prerequisite: AGM 110. Stresses the operation, diagnosis, and service of GM body electrical and electronics systems. Credit may be earned in AGM 210 or SKGM 210 or ACD 210 or AGM 241, but not in more than one. (30-30)

**AGM 212 Suspension System Service 7 Sem Hrs**

Introduces the operation, maintenance, and service of GM steering and suspension systems. Credit may be earned in AGM 212 or SKGM 212 or ACD 212 or AGM 133 but not in more than one. (56-84)

**AGM 214 Heating/Air Conditioning 5 Sem Hrs**

Prerequisite: AGM 143. Introduces the operation, maintenance, and service of GM Heating, Ventilation, and Air Conditioning systems and their controls. Credit may be earned in AGM 214 or SKGM 214 or ACD 214 or AGM 233, but not in more than one. (50-50)

**AGM 216 Driveline Service 6 Sem Hrs**

Prerequisite: AGM 143. Studies GM passenger car and light truck clutch, manual transmission, driveshaft, differential, transaxle, front driving axle, and transfer case terminology, operation, and diagnosis. Develops skills in diagnosis, adjustment, and repair of clutches, manual transmissions, driveshafts, differentials, transaxles, front driving axles, and transfer cases. Credit may be earned in AGM 216 or SKGM 216 or ACD 216 or AGM 231 but not in more than one. (60-60)

**AGM 218 Automatic Electronic Transmission Service 8 Sem Hrs**

Prerequisite: AGM 143. Introduces the operation, maintenance, and service of GM electronically controlled transmissions. Credit may be earned in AGM 218W or SKGM 218W or ACD 218W or AGM 232, but not in more than one. (80-100)

**AGM 234 Dealership Work Experience III 2 Sem Hrs**

Prerequisite: AGM 143. Provides work experience in the operation, maintenance, and service of GM manual and automatic heating, ventilation and air conditioning systems, automatic transmissions, and drivelines. Stresses proper handling of refrigerant and safety. (6-600)

**AGM 238 GM Information Systems 2 Sem Hrs**

Develops skills to use the current operating system on a computer. Introduces essential elements of computerized automotive technical support systems. Credit may be earned in CST 238 or AGM 238, but not both. (30-0)

**AGM 290-299 Special Projects in Auto Service Education**

## Architecture Technology

### **ARC 101      Materials and Methods of Construction      3 Sem Hrs**

Introduces basic construction materials; properties, recommended use, space requirements, methods of finishing, building code implications, and energy conservation applications. (45-0)

### **ARC 105      Architectural Drafting I      4 Sem Hrs**

Teaches fundamentals of architectural drafting including linework emphasis, lettering design, symbol applications, multiview projections relative to architectural drawings, one point perspective, two point perspective, graphic design elements, and presentation of floor plans, sections and elevations. Studies space requirements and method of representing basic residential elements. Includes demonstrations and instruction in basic procedures of CAD. (45-45)

### **ARC 106      Architectural Drafting II      4 Sem Hrs**

Prerequisite: ARC 105 or permission of instructor. Introduction to construction drawing organization. Development of coordinated drawings for one small building with emphasis on application of notes, dimensions, and development of graphic skills. Includes a study of CAD techniques and the use of the computer for drawing production, storage and retrieval, development of selected architectural details relating to foundation, floor, wall, and roof assemblies, with emphasis on energy conservation. (45-45)

### **ARC 111      Mechanical and Electrical Systems for Buildings      3 Sem Hrs**

Fundamentals and operating principles of air conditioning, plumbing, and electrical systems; including typical layout, calculations, sizing, and methods of installation. Credit may be earned in ARC 111 or RC 206 but not in both. (45-0)

### **ARC 114      Architectural AutoCAD 2D Basics      2 Sem Hrs**

Prerequisites: Previous drafting experience or coursework with instructor permission; ARC 105 prior to or concurrently. Introduces 2D AutoCAD drawing, including: Basic drawing and editing commands applied to new and existing architectural drawings, basic drawing prototype setup, DOS and windows operation procedures, saving drawings to hard disks and floppy disks, printing drawings to laser printers and pen plotters, completion of floor plan, section, and elevation drawings. Introduces add on architectural software for generating automatic architectural elements for inclusion into architectural drawings. Credit may be earned in ARC 114 or CAD 114 but not in both. (30-0)

### **ARC 118      AutoCAD Applications      3 Sem Hrs**

Prerequisite: ARC 114. Uses and expands on commands learned in ARC 114, AutoCAD Basics. Accomplishes this through the development of various additional working drawings such as elevations, sections and details. (45-0)

### **ARC 204      Estimating Building Construction      3 Sem Hrs**

Prerequisite: MATH LEVEL 4, ARC 101 and RC 101. Introduces methods and procedures commonly used in determining the costs of construction materials. (45-0)

### **ARC 205      Architectural Drafting III      3 Sem Hrs**

Prerequisite: ARC 106. Develops construction documents for a non-residential building. Introduces concrete, masonry, and steel construction with their various detailing requirements, symbolisms, and characteristics utilized in installation of mechanical and electrical systems. Includes a study of computer-aided design examples. (15-90)

### **ARC 206      Architectural Drafting IV      3 Sem Hrs**

Prerequisite: ARC 205. Develops sketches into preliminary and construction drawings. Uses CAD for design and drafting examples and production. Continues the design and drafting of concrete, masonry, and steel construction. Integrates structural, mechanical, electrical, and solar strategies into commercial buildings. (15-90)

### **ARC 211      Elements of Structural Design      2 Sem Hrs**

Prerequisite: MATH LEVEL 4. Bridges the gap of understanding between engineering and building contractors. Identifies the weights of construction materials. Analyzes loads, stresses, and deflections of beams, floor joists, roof trusses and columns. Provides basic design experience in wood, steel, and concrete. (30-0)

### **ARC 214      Architectural AutoCAD 3D Basics      3 Sem Hrs**

Prerequisites: ARC 114, CAD 114, or a working knowledge of AutoCAD and permission of the instructor. Introduces 3D AutoCAD drawing, including: Conversion of 2D drawings to 3D, user coordinate system (UCS) manipulation, line extrusion, 3D faces, dynamic viewing, paper space viewing and printing, shading, hiding, simplified methods of architectural presentation. Continues study of 2D techniques with application to 3D objects. Introduces add on software for generating automatic architectural elements (currently KETIV brand software is used) including: doors, windows, stairs, roofs, cross sections, and predrawn architectural icons (cars, plants, people, furniture, etc.) (45-0)

### **ARC 221      Site Preparation      3 Sem Hrs**

Prerequisite: MATH LEVEL 4. Studies fundamentals of site analysis, including utility services, metes and bounds, solar access and restrictions. Teaches elements of surveying including use of instruments, leveling, measurement of angles and distances, contours, location of site elements and development of a site plan from field data. Interprets engineering surveys, introduces landscape design, and studies computer aided design examples. Credit may be earned in ARC 221 or SKCT 105 but not in both. (45-0)

### **ARC 251      History of Architecture      2 Sem Hrs**

Teaches the historical development of architecture as a major art form. Views this development in relation to man's knowledge of building techniques and available materials as affected by geographic, economic, political and religious influences. Credit may be earned in ART 251 or ARC 251, but not both. (30-0)

### **ARC 290-299      Special Projects in Architectural Technology**

### **ARC 314      Architectural Rendering Basics      3 Sem Hrs**

Prerequisite: ARC 214 or working knowledge of AutoCAD and permission of the instructor. Introduces 3D studio VIZ rendering mechanisms/ AutoCAD rendering mechanisms. Operates camera angles, creates light sources, digital materials and applies existing digital materials to 3D model from ARC 214. Introduces rendering techniques in both 3D studio VIZ and AutoCAD. Renders bitmap image for final class project. Continues, from ARC 214, to next logical sequential rendering level. (45-0)

## Art

### **ART 100      Elements of Color Photography      3 Sem Hrs**

Introduces technical operations of 35mm cameras in the color medium. Improves quality and design of photographs and develops aesthetic awareness and visual literacy. Credit may be earned in ART 100 or PHO 100 but not in both. (45-0)

### **ART 101      Photography I      3 Sem Hrs**

Applies basic aesthetic problems of photography including: a historical and critical context for looking at and making photographs; concurrent darkroom practice which includes black and white film; print development and camera operations. Additional lab hours to be arranged. Credit may be earned in PHO 101 or ART 101 but not in both. (0-90)

### **ART 102      Photography II      3 Sem Hrs**

Prerequisites: PHO 101 or ART 101 or permission of instructor. Provides additional foundations of black and white photography to improve technical skills. Continues to build visual literacy, aesthetic awareness, and personal style. Includes working with specialty films and alternative photographic processes. Credit may be earned in PHO 102 or ART 102 but not in both. (0-90)

**ART 105 Art Experience 3 Sem Hrs**  
Designed for students not majoring in Art to provide an enriching experience to two- and three-dimensional media: to include drawing, painting, graphic media, clay and other sculptural media. It is designed primarily for the general degree student who wishes to have some art experience. There will also be an emphasis on art appreciation. (15-45)

**ART 111 Drawing I 3 Sem Hrs**  
Introduces techniques in various drawing media and concepts in visual art with emphasis in drawing from observation. (0-90)

**ART 112 Drawing II 3 Sem Hrs**  
Prerequisite: ART 111. Continues the exploration of formal aspects of visual art with emphasis placed on articulating a personal response to various drawing problems. Practices drawing techniques and processes at the intermediate level using a variety of drawing media. (0-90)

**ART 113 Art Education 3 Sem Hrs**  
Introduction to art for prospective teachers. Develops the ability to stimulate the creative interests of children in art. Acquaints the student with a variety of methods and materials adjusted to various grade levels. (0-90)

**ART 115 Design I 3 Sem Hrs**  
Experiments with the basic elements of design: line, form, space, value, textures, and color. Utilizes a variety of media in developing a visual vocabulary and understanding of art elements and composition. (0-90)

**ART 116 Design II 3 Sem Hrs**  
Explores a series of problems designed to explore the elements of design in spatial compositions using a variety of basic materials. (0-90)

**ART 151H Art History and Appreciation I - Honors 3 Sem Hrs**  
Prerequisites: READING LEVEL 5 and WRITING LEVEL 3 and permission of the Honors Office. Required of all first-year art majors. Surveys Western art from Prehistoric times to the Renaissance. Deals with major works and artists of the Prehistoric, Ancient, Classical and Medieval cultures. Emphasizes the architecture and sculpture of these periods. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in ART 151 or ART 151HW but not in both (45-0).

**ART 151 Art History and Appreciation I 3 Sem Hrs**  
Prerequisites: READING LEVEL 3 or WRITING LEVEL 3. Required of all first-year art majors. Surveys Western art from Prehistoric times to the Renaissance. Deals with major works and artists of the Prehistoric, Ancient, Classical and Medieval cultures. Emphasizes the architecture and sculpture of these periods. Credit may be earned in ART 151 or ART 151H but not in both. (45-0)

**ART 152 Art History and Appreciation II 3 Sem Hrs**  
Prerequisites: READING LEVEL 3 or WRITING LEVEL 3. Required of all first-year art majors. Surveys the history of Western art from the Renaissance through Baroque, neo-classicism, Romanticism, Impressionism, Expressionism and various modern schools. Emphasizes the painting of those periods. (45-0)

**ART 171 Digital Media for the Web 2 Sem Hrs**  
Prerequisites: CST 103 or an understanding of file management and CST 106 or ability to search the internet for specific information. Explores the different types of graphic images and sounds that can be incorporated into a web page. Uses hands-on experiences with a number of different software packages to create and modify images and sounds. (30-0)

**ART 206 Digital Photography 3 Sem Hrs**  
Prerequisite: ART 100 or ART 101 or PHO 100 or PHO 101. Introduces basic techniques of digital photography, with emphasis on the creative use of media in fine and applied art. Utilizes slide presentations, videos, CD Roms, and the Internet as resources. Credit may be earned in PHO 206 or ART 206 but not both.. (0-90)

**ART 210 Figure Drawing 3 Sem Hrs**  
Prerequisite: ART 111. Introduces drawing of the human figure in pictorial space. Emphasizes in-depth awareness of the body's underlying geometry and anatomical structure working with live model. (0-90)

**ART 217 Painting I 3 Sem Hrs**  
Prerequisites: ART 111, ART 115. Introduces fundamental painting concepts and techniques. Surveys various processes from traditional to contemporary with an emphasis placed on articulating a personal response to various painting problems. (0-90)

**ART 218 Painting II 3 Sem Hrs**  
Prerequisite: ART 217. Continues exploration and practices of painting processes and techniques. Develops and executes creative resolutions to various conceptual problems with guidance from instructor. (0-90)

**ART 219 Watercolor 3 Sem Hrs**  
Prerequisites: Art 111, Art 115. Introduces fundamental watercolor painting concepts, techniques and materials. Surveys various processes from traditional to contemporary with an emphasis placed on articulating a personal response to various painting problems (0-90)

**ART 222 Sculpture 3 Sem Hrs**  
Prerequisite: ART 115 or 116 or permission of instructor. An introduction to a variety of sculptural concepts and techniques utilizing a variety of media. (0-90)

**ART 223 Metal Sculpture 3 Sem Hrs**  
Co-requisites: WELD 101 and WELD 108. Introduces the use of a variety of metal processes to create sculptural art forms. These processes include oxy-acetylene brazing and welding, mig welding, cutting and fabrication techniques. (0-90)

**ART 231 Ceramics I 3 Sem Hrs**  
Introductory study of clay, glazes, and their applications, and techniques of wheel and hand construction through the process of low temperature Raku firing. Course fee required. (0-90)

**ART 232 Ceramics II 3 Sem Hrs**  
Prerequisite: ART 231 or permission of instructor. Ceramics II uses high-fire stoneware clay bodies and introduces firing techniques with high fire glazes. The techniques learned in Ceramics I are employed and are expanded to create a variety of well developed utilitarian and sculptural forms. Course fee required. (0-90)

**ART 251 History of Architecture 2 Sem Hrs**  
Teaches the historical development of architecture as a major art form. Views this development in relation to man's knowledge of building techniques and available materials as affected by geographic, economic, political, and religious influences. Credit may be earned in ART 251 or ARC 251, but not in both. (30-0)

**ART 253 History of Graphic Design 3 Sem Hrs**  
Surveys the evolution of graphic design in Western culture from prehistory to the postmodern era. Discusses ideas, theories and practices in art and design, as well as the quality, breadth and comprehension of resourcefulness, content and the applicable origins of graphic design. (45-0)

**ART 255 Contemporary Art History 3 Sem Hrs**  
Prerequisite: READING LEVEL 4 or WRITING LEVEL 3 or ART 152. Explores contemporary visual arts, with an emphasis on art created since 1945. (45-0)

**ART 261 Contemporary Art in Chicago 2 Sem Hrs**  
Surveys contemporary art forms, processes, and ideas of the international art market in a 3-day visit to Chicago which will include the International Art Fair, the Chicago Art Institute and the Contemporary Museum of Art. Students pay tuition plus all of their expenses. (30-0)

**ART 262 Art Internship I 1 Sem Hr**  
Prerequisites: Second year art student with minimum of a 3.0 GPA and instructor approval. Provides advanced hands-on experience through internship with approved off-site gallery photo or design studio, company or organization. Requires at least 6 hours per week under direct supervision of onsite internship coordinator. (0-90)

**ART 267 Producing A Student Publication 3 Sem Hrs**  
Prerequisites: ART 271, ART 276, ART 277. Provides a guided opportunity to learn about publishing by compiling, selecting, editing, and designing an annual publication of student writing, photography, and artwork. Focuses on hands-on experience in critical reading, writing, and thinking; editing; layout; production details; marketing; design; and distribution. Credit may be earned in ART 216 or ART 267, but not both. Credit may also be earned in IHU 267, but not in the same semester. (60-90)

**ART 271 Digital Imaging I 3 Sem Hrs**  
Presents technical aspects/skills of Adobe/Macintosh software (primarily Photoshop and Imageready), with an arts emphasis toward developing aesthetic awareness. Explores image and photo manipulation, combining word and image, scanning, and acquired input. Introduces storage and output methods. (30-60)

**ART 274 Digital Painting 3 Sem Hrs**  
Prerequisites: ART 111 and ART 115. Draws and paints using the electronic canvas to create new images by scanning previous art works, textures, and photographs. Emphasizes the techniques of using the software program, and stresses the elements of art and design. (30-60)

**ART 276 Electronic Page Design 3 Sem Hrs**  
Prerequisites: ART 271. Introduces students to the capabilities and applications of page- layout design software (such as QuarkXPress). Builds on a knowledge of Basic Two-Dimensional Design, and the use of Photoshop and Illustrator to strengthen design and layout skills. Addresses file management techniques and output-ready file formats for high-end printers at commercial service bureaus and printing companies. (30-60)

**ART 277 Illustration - Digital Media 3 Sem Hrs**  
Presents the use of Illustrator software including design and technical aspects, and the relationship to other graphic applications in the printing industry. (30-60)

**ART 279 Web Page Design Arts 3 Sem Hrs**  
Prerequisite: ART 271. Understand fundamental web and internet concepts and how to adapt and extend basic design principles to web design using the Adobe Dreamweaver software application. (30-60)

**ART 280 Printmaking I, Past & Present 3 Sem Hrs**  
Prerequisites: ART 111 and ART 115. (Highly Recommended: ART 271 or ART 206 and ART 217). Introduces a new "digital era" approach to fine-art printmaking; negotiating between the studio, computer, printer, and press. Combines and incorporates safe, non-toxic print and transfer methods and materials (both traditional and contemporary) with new digital directions and technologies found in today's printmaking curriculum and professional art industry. (0-90)

**ART 283 Multimedia Authoring 3 Sem Hrs**  
Prerequisite: ART 271 and ART 277. Presents the practice and production of digital multimedia technology and movie-making (primarily) through the use of Macromedia Director software. Concentrates on the combined and individual creation of interactive movies, sound, animation, game design, marketing presentations, simulations, kiosks and full-scale multimedia productions. (30-60)

**ART 284 Typography 3 Sem Hrs**  
Prerequisites: ART 271 and ART 276 and ART 277. Introduces typographic principles, guidelines and related terminology. Examines type, its classification, measurement systems and methods of specification. Explores various typographic applications including use of grid systems and the development of visual hierarchy of information. (45-45)

**ART 285 Digital Animation and Interactive Design 3 Sem Hrs**  
Prerequisite: ART 271 and ART 277. Introduces (primarily) Macromedia's Flash software authoring environment. Explores various ways to create interactive animation for the web or as stand alone CDs. Examines the additional use of sound, related software and web multimedia motion graphics. (30-60)

**ART 286 Digital Animation and Interactive Design II 3 Sem Hrs**  
Prerequisites: ART 285. Emphasizes cooperative learning, problem solving and the exploration of current design trends in technology. Applies contemporary concepts, utilizing computer literacy, (information literacy), and accessing information to create original web sites and digital 3D interactivity. Provides the ability to produce and develop game design, animations for the web, interactive video presentations, and/or explore a creative endeavor targeted for a specific audience, or fine art purpose. (30-60)

**ART 287 Printmaking II, Past and Present 3 Sem Hrs**  
Prerequisites: ART 280 (or equivalent). Highly Recommended: ART 271 or ART 206, ART 116 or ART 217. Expands upon a "digital era" approach to fine-art printmaking; negotiating between the studio, computer, printer and press. Combines and incorporates safe, non-toxic print and transfer methods and materials (both traditional and contemporary) with new digital directions and technologies found in today's printmaking curriculum and professional art industry. Develops further their printmaking portfolios in a variety of approaches taught, or select a chosen concentration in printmaking to further investigate or explore. (0-90)

**ART 288 Digital Imaging II 3 Sem Hrs**  
Prerequisite: ART 271. Explores advanced image and photographic manipulation software. Develops further and emphasizes aesthetic awareness in the art of digital image-making. Credit may be earned in either ART 271B or ART 272 but not both. (30-60)

**ART 289 New Media 3 Sem Hrs**  
Prerequisites: None. Recommend ART 111, ART 115, ART 116. Provides a lecture/discussion style format in combination with studio work time to explore new art forms. Credit may be earned in ART 289 or IHU 289 but not in both. (30-60)

**ART 290-299 Special Projects in Art**

## American Sign Language

**ASL 111 American Sign Language I 3 Sem Hrs**  
Introduces the student to American Sign Language, the language many deaf or hearing impaired adults use. Incorporates the deaf culture throughout the course. Credit may be earned in SL 111 or ASL 111 but not in both. (45-0)

**ASL 112 American Sign Language II 4 Sem Hrs**  
Prerequisites: SL 111 or ASL 111 or instructor permission. Builds upon skills, knowledge, vocabulary and grammar gained in SL 111/ASL 111, while increasing conversational fluency and speed. Emphasizes expressive signing, including multiple meaning words, concept words vocabulary, classifiers and synonyms. (60-0)

**ASL 113 American Sign Language Fingerspelling A 1 Sem Hr**  
Prerequisite: ASL 111 or permission of the instructor. Focuses on fingerspelling as a part of the communication process of American Sign Language. Addresses expressive and receptive skills. Meets the needs of varying skill levels. (15-0)

**ASL 114 American Sign Language Fingerspelling B 1 Sem Hr**

Prerequisite: ASL 111 or SL 111 or permission of the instructor. May be taken before or after ASL 113. Focuses on fingerspelling in the context of a signed sentence and proper use of fingerspelling in accordance with Deaf Cultural Rules. Addresses expressive and receptive skills. Meets the needs of varying skill levels. (15-0)

**ASL 116 Sign for Religion 1 Sem Hr**

Prerequisite: ASL 111 or equivalent. Offers additional receptive and expressive sign language vocabulary and concepts specific to church and temple. (15-0)

**ASL 200 Deaf Culture 3 Sem Hrs**

Studies the Deaf community and culture. Addresses a broad array of topics, including history, rules for social interaction, group norms, identity, language and values. Discusses Deaf perspective and its interface with the hearing culture. (45-0)

**ASL 211 American Sign Language III 4 Sem Hrs**

Prerequisite: SL 111 or ASL 111, SL 112 or ASL 112 or demonstrated knowledge of American Sign Language. Builds upon skills, knowledge, vocabulary and linguistics gained in previous classes. Exposes student to more intense American Sign Language, with more emphasis on expressive skills than previous courses. Continues exploration of Deaf culture. (60-0)

**ASL 212 American Sign Language IV 4 Sem Hrs**

Prerequisites: SL 121 or ASL 211 or demonstrated knowledge of American Sign Language. Concludes sequence of sign language courses. Provides opportunity to develop advanced skill, fluency and vocabulary. Deals with issues related to Deaf culture. Includes information flow and expression beyond repetition and replication. Credit may be earned in SL 122 or ASL 212 but not in both. (60-0)

**ASL 290-299 Special Projects in American Sign Language**

## Astronomy

**AST 111 Introduction to Astronomy 3 Sem Hrs**

Familiarizes the student with the origin, characteristics, and evolution of the solar system, the stars, the galaxies, and the universe. Emphasizes the way in which our understanding of the universe has changed. (45-0)

**AST 111L Astronomical Investigation 1 Sem Hr**

Prerequisite: PHY 100 or AST 111, but not both, or concurrent enrollment. Includes experimental design to investigate such events as the night sky, planetary motion, and astronomical laws. Explores use of telescopes and spectrosopes in establishing the relationship among planets in the solar system, star distances, and stellar life cycles. (0-30)

**AST 290-299 Special Projects in Astronomy**

## Auto Service

**AUT 100 Introduction to Automotive Service 3 Sem Hrs**

Introduces the Automotive Service facility, basic tools and equipment, service publications, safety practices, the automobile, its components, and professionalism. Concentrates on terminology and general component operation. (30-25)

**AUT 108 Introductory Automotive Electronics 3 Sem Hrs**

Studies automotive electrical and electronic fundamentals, magnetism, and electrical test equipment, terminology, operation, and diagnosis. Develops skills in establishing an electrical base for advanced electrical/electronic courses and in controlled learning experiences with basic electricity and electronics using meters and test equipment. (35-25)

**AUT 110 Automotive Electronics Service 4 Sem Hrs**

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies electrical test equipment, battery, wiring diagram, starting and charging system terminology, operation, and diagnosis. Develops skills in diagnosis of battery, diagnosis and repair of starting and charging systems and application of wiring diagrams. (40-40)

**AUT 112 Engine Service 6 Sem Hrs**

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies automotive gasoline engines, terminology, operation, and diagnosis. Develops skills in controlled learning experiences on laboratory engine assemblies. (45-75)

**AUT 114 Brake System Service 5 Sem Hrs**

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies drum, disc, hydraulic, power assist, antilock terminology, operation, and diagnosis. Develops skills on drum, disc, hydraulic, power assist, and antilock brake systems. (40-60)

**AUT 210 Body Electronics Service 3 Sem Hrs**

Prerequisite: AUT 100 and AUT 108 with a minimum grade of "C" (2.0).. Studies body wiring diagrams, operation and location of electrical devices. Develops skills in the diagnosis of malfunctions within accessory and convenience circuits. (30-30)

**AUT 212 Suspension System Service 7 Sem Hrs**

Prerequisite: AUT 100 and AUT 108 with a minimum grade of "C" (2.0). Studies frame, steering, and suspension system terminology, operation, and diagnosis. Develops skills in frame, unibody, steering, suspension, four wheel drive and four wheel alignment. (56-84)

**AUT 214 Heating/Air Conditioning Service 5 Sem Hrs**

Prerequisite: AUT 100 and AUT 108 with a minimum grade of "C" (2.0). Studies passenger car and light truck heating and air conditioning terminology, operation and diagnosis. Develops skills in diagnosis and repair of the heating and air conditioning system components. (50-50)

**AUT 216 Driveline Service 6 Sem Hrs**

Prerequisite: Minimum "C" (2.0) grade in both AUT 112 and 212. Studies passenger car and light truck clutch, manual transmission, driveshaft, differential, transaxle, front driving axle, and transfer case terminology, operation, and diagnosis. Develops skills in diagnosis, adjustment, and repair of clutches, manual transmissions, driveshafts, differentials, transaxles, front driving axles, and transfer cases. (60-60)

**AUT 218 Automatic Electronic Transmission Service 8 Sem Hrs**

Prerequisites: Minimum "C" (2.0) grade in both AUT 112 and AUT 212. Studies passenger car and light truck automatic transmission terminology, operation, and diagnosis. Develops skills in diagnosis, adjustment, and repair of passenger car and light truck rear wheel drive and front wheel drive automatic transmissions. Credit may be earned in AUT 122 or AUT 218 but not in both. (80-100)

**AUT 226 Advance Engine Electronics & Fuel System Service 7 Sem Hrs**

Prerequisites: Minimum "C" (2.0) grade in AUT 110, AUT 210, and AUT 112. Studies electronic inputs to the computerized engine controls; units of instruction necessary to develop a thorough understanding of induction systems and injection systems. Develops skills through controlled learning experiences with sensors, fuel delivery, and fuel injection systems. Credit may be earned in AUT 220 and AUT 222 or AUT 226 but not in both. (60-90)

**AUT 228 Electronic Engine Performance & Emission Control 7 Sem Hrs**

Prerequisite: Minimum "C" (2.0) grade in AUT 110, AUT 112 and AUT 210. Studies units of instruction necessary for a thorough understanding of ignition systems, emission control systems, and driveability diagnosis. Develops skills through controlled learning experiences with ignition systems, emission control systems, and driveability diagnosis. Credit may be earned in AUT 224 or AUT 228 but not in both. (60-90)

- AUT 239 Automotive Service Information Systems 1 Sem Hr**  
Develops skills to use the current operating system on a computer and to learn navigational skills for the aftermarket automotive service information systems. (5-15)
- AUT 252 Automotive Performance Fundamentals 5 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Teaches high performance aspects of automotive engines, engine support systems, drivetrains, suspension and safety. (47-28)
- AUT 261 Auto Service Skills Internship I 1 Sem Hr**  
Prerequisites: Michigan Mechanic Training Permit. Provides work experience in the operation, maintenance, and service of customer vehicles in a licensed repair facility. Emphasizes the areas of engine, suspension, brake, and electrical repairs. (0-150)
- AUT 262 Auto Service Skills Internship II 1 Sem Hr**  
Prerequisite: Michigan Mechanic Training Permit. Provides work experience in the operation, maintenance, and service of customer vehicles in a licensed repair facility. Emphasizes areas of drivelines, automatic transmission, HVAC, suspension, and electrical repair. (0-150)
- AUT 290-299 Special Projects in Automotive Service**

## Biology

- BIO 101 Introduction to Anatomy And Physiology 4 Sem Hrs**  
An introduction to basic human anatomy and physiology taught in a lecture-demonstration format. Includes basic principles of the structures and functions of the human body and the terminology related to these topics. (60-0)
- BIO 110 Environmental Science 4 Sem Hrs**  
Surveys the broad field of environmental science using local, regional, and global examples. Includes the following major topics: the scientific method, an introduction to chemistry, ecological principles, types of pollutants, energy principles, population issues, the environmental impact of human choices, and the role of economics, risk perception, and political choices in environmental decision-making. Exposes students to a variety of field, survey, and laboratory techniques useful in assessing environmental quality. (45-45)
- BIO 111H Principles of Biology - Honors 4 Sem Hrs**  
Prerequisite: READING LEVEL 5 and WRITING LEVEL 3 and permission of the Honors Office. Introduces the fundamental concepts underlying biology and the relevance of these concepts to the student as a member of our global society. Includes the basic chemistry of the cell, cell structure and metabolism, molecular biology, genetics, the origin and evolution of living things, and ecological principles. Applicable as science lecture and laboratory credit for non-majors. Not appropriate for biology majors. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in BIO 111W or BIO 111HW but not in both. (45-45)
- BIO 111 Principles of Biology 4 Sem Hrs**  
Introduces the fundamental concepts underlying biology and the relevance of these concepts to the student as a member of our global society. Includes the basic chemistry of the cell, cell structure and metabolism, molecular biology, genetics, the origin and evolution of living things, and ecological principles. Applicable as science lecture and laboratory credit for non-majors. Not appropriate for biology majors. Credit may be earned in BIO 111W or BIO 111HW but not in both. (45-45)
- BIO 113 Trees and Shrubs Of Michigan 1 Sem Hr**  
Identification of the Michigan trees and shrubs indigenous to the Saginaw Valley. Methods used in this field course include use of the leaf, bark, twig, flower and silhouette. Historical and practical information presented as appropriate. (15-0)

- BIO 114 Animal Behavior - The Wolf 1 Sem Hr**  
Designed to provide student with introduction to study of animal behavior with focus on the wolf. Topics covered will include development of behavior patterns, social behavior, effects of imprinting, role of pheromones in sexual behavior, and hunting behavior. Student will prepare ethogram comparing different subspecies and various breeds of dogs. A weekend field trip is required with student paying own expenses. (15-0)
- BIO 114A Animal Behavior - Dolphin 1 Sem Hr**  
Provides an introduction to the student of dolphin behavior dolphin. Includes study of basic animal physiology, colony and pair dynamics, behavior modification and training, maternity behavior, basic conservation issues, habitat ecology, and natural history. Includes field activities involving observational and hands-on activities during a field trip at student's expense. (15-0)
- BIO 116 Winter Ecology 2 Sem Hrs**  
Explores the adaptations and coping behaviors of organisms and communities to the additional stresses placed on them by winter. Includes such major topics as: weather and climate, hibernation, freezing avoidance, community changes, and behavior of animals. Includes identification of plants, animal tracks, insect galls, bird nests, and various kinds of snow conditions. Requires a weekend field trip. Student must pay own expenses. (30-0)
- BIO 117 Birds of Michigan 1 Sem Hr**  
Identification of resident and migratory birds by sight and song. Includes bird nesting, feeding and territorial behavior. Taught primarily in the field. (15-0)
- BIO 118 Michigan Wildflowers 1 Sem Hr**  
Identification of common seasonal wildflowers of the open field and deciduous woods. Includes ecological significance of major families of flowers. Historical and practical information presented when appropriate. Taught primarily in the field. (15-0)
- BIO 119 Stream Ecology 1 Sem Hr**  
Introduces the physical environmental factors that affect organisms inhabiting streams as well as the human influence. Emphasizes the energy flow through stream ecosystems along with the lifecycles and interdependencies of stream animals. Includes fieldwork on at least four different kinds of streams. Includes a weekend field trip with the student paying own expenses. Credit may be earned BIO 119 or 219 but not both. (15-0)
- BIO 123 Survey of Michigan Plant Communities 2 Sem Hrs**  
Discusses the influence of physical factors on the varieties of plant communities. Uses the interdependency of organisms as an underlying theme. Examines effects of humans on the nature of plant communities. Emphasizes fieldwork and use of field keys and reference materials for plant identification. Taught primarily in the field. Requires a weekend field trip. (30 - 0)
- BIO 126 Ecology and Natural History of Isle Royale National Park 1 Sem Hr**  
Introduces a remote area of ecosystems. Discusses key native and introduced species of plants and animals. Emphasizes the uniqueness, yet interdependency of organisms. Highlights the long-studied island Wolf-Moose interaction. Requires a three-day trip to the island at student expense. (15-0)
- BIO 126A Ecology and Natural History of the Appalachia Region 1 Sem Hr**  
Prerequisite: Requires concurrent enrollment in LEA 213. Introduces a unique area of ecosystems. Discusses key native and introduced species of plants and animals. Emphasized keystone species and interdependency of organisms. Highlights the Riparian Flora and Fauna, including the reintroduced red wolf species. Requires a three day trip to the Appalachian area at student's expense. (15-0)

**BIO 130 Introduction to Chemistry and Cell Biology 3 Sem Hrs**

Prerequisite: READING LEVEL 5. Introduces the principles and concepts of chemistry and cell biology for students entering allied health curricula. Includes basic math for science, the laws of thermodynamics, theory of atomic structure, chemical bonding, acids, bases, and buffers; introduction to organic chemistry, cell structure and function, basic metabolic pathways, mitosis, meiosis, classical and physiological genetics. Recommended as a preparatory class for BIO 140 and BIO 152 for students with limited background in cell biology and/or chemistry. (30-30)

**BIO 140 Essentials Of Human Anatomy & Physiology 5 Sem Hrs**

Prerequisite: MATH LEVEL 3 or MTH 117 and READING LEVEL 5. Introduces the basic principles and concepts of chemistry, biochemistry and cell biology, as well as human anatomy and physiology for students entering certain allied health curricula. Includes structures and functions of the human body and related terminology. (75-45)

**BIO 152 Human Anatomy & Physiology I 4 Sem Hrs**

Prerequisites: MATH LEVEL 3 or MTH 117 and READING LEVEL 5. Recommended: BIO 130 or high school chemistry. Prepares you for various allied health and nursing professions as first course of two semester sequence. Provides an introduction to the basic principles of chemistry and biochemistry as they relate to human physiology. Gives major consideration to the anatomy and physiology of cells and tissues and the following systems: skeletal, muscle, nervous, and endocrine. (45-45)

**BIO 153 Human Anatomy & Physiology II 4 Sem Hrs**

Prerequisite: BIO 152 with a "C" (2.0) minimum grade or BIO 140 with a "B" (3.0) minimum grade. BIO 153 is a continuation of BIO 152. Investigates the anatomy and physiology of the following systems: circulatory, lymphatic, respiratory, digestive, urinary, and reproductive. Includes human developmental biology and fluids and electrolytes. (45-45)

**BIO 160A Human Anatomy & Physiology Review 1 Sem Hr**

Prerequisites: BIO 140 or BIO 153 with a "C" (2.0) minimum grade. Provides review and update of contents of cardiovascular system from BIO 140 or BIO 153 using cooperative learning found in Health Care Team concept. Focuses on developing and strengthening abilities in critical thinking, problem solving, and student directed learning. (15-0)

**BIO 160B A & P Case Studies 2 Sem Hrs**

Prerequisites: BIO 140 or BIO 153 or BIO 241 with a "C" (2.0) minimum grade. Provides comprehensive review and updates of contents of human anatomy and physiology using case studies of six different body systems (cardiovascular/respiratory/nervous/digestive/renal/endocrine). Focuses on developing critical thinking, problem solving, and student directed learning while establishing mastery of material. (30-0)

**BIO 171 Integrated General Biology I 4 Sem Hrs**

Prerequisite: Successful completion [with C (2.0) minimum grade] of CHM 111 or CHM 101 or BIO 130 or approval by instructor. Biology 171 is one of two introductory courses for biology majors and related fields. Together, BIO 171 and BIO 172 constitute a complete introduction to college level biology. These courses may be taken in any order regardless of the course numbers. Includes the scientific method, diversity of life with emphasis on biochemistry, cell structure and function, bioenergetics and metabolism, molecular, Mendelian and developmental genetics. (45-45)

**BIO 172 Integrated General Biology II 4 Sem Hrs**

Prerequisite: Successful completion, with a minimum grade of C (2.0), of both high school chemistry and high school biology or CHM 101 and BIO 111. BIO 172 is one of two introductory courses for biology majors and related fields. Together, BIO 171 and BIO 172 constitute a complete introduction to college level biology. These courses may be taken in any order regardless of the course numbers. Includes a survey of the five kingdoms with emphasis on comparative anatomy, development and ecological roles, evolutionary patterns, population genetics, embryology behavior and ecology. (45-45)

**BIO 199 Human Heredity And Sexuality 4 Sem Hrs**

Prerequisites: High School biology and chemistry. Introduces the fundamental concepts underlying biology with a focus on heredity and sexuality. Includes cell biology, inborn errors of metabolism, reproduction and development, immunology and HIV/AIDS, oncogenes and cancer, plus classical, population and molecular genetics. Explores the frontiers of health and medicine including reproductive technologies, biotechnology, gene therapy, prenatal diagnosis, genetic screening and the bioethics of the Human Genome Project. Includes case study analysis and laboratory investigations related to cellular and population genetics and biotechnology. Credit may be earned in BIO 199 or BIO 199H but not in both. (45-45)

**BIO 199H Human Heredity And Sexuality - Honors 4 Sem Hrs**

Prerequisites: LEVEL 5 READING and LEVEL 3 WRITING and permission of the Honors Office. Introduces the fundamental concepts underlying biology with a focus on heredity and sexuality. Includes cell biology, inborn errors of metabolism, reproduction and development, immunology and HIV/AIDS, oncogenes and cancer, plus classical, population and molecular genetics. Explores the frontiers of health and medicine including reproductive technologies, biotechnology, gene therapy, prenatal diagnosis, genetic screening and the bioethics of the Human Genome Project. Includes case study analysis and laboratory investigations related to cellular and population genetics and biotechnology. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in BIO 199 or BIO 199H but not in both. (45-45)

**BIO 203 General Microbiology 4 Sem Hrs**

Prerequisites: BIO 130 or BIO 140 or BIO 152 or BIO 171, or BIO 241 each requiring a "C" (2.0) minimum grade or successful completion of the BIO 130 competency exam. Surveys the microorganisms associated with infectious diseases, including the bacteria, viruses, fungi, and protozoa's. Emphasizes the health care aspects and the distribution and activities of microbes as related to the following: microbial nutrition and anatomy, growth, disease, epidemiology, infection and immunity. Uses labs that stress aseptic techniques and that develop skills necessary to handle microbes in health care settings, including the characterization of unknown microbes. (45-45)

**BIO 219 Stream Ecology: Aquatic Macroinvertebrate Research 2 Sem Hrs**

Introduces the physical environmental factors that affect organisms inhabiting streams as well as human influences on streams. Emphasizes the energy flow through stream ecosystems along with the lifecycles and interdependencies of stream animals. Includes fieldwork on at least four different kinds of streams. Emphasizes interrelationships of macroinvertebrate communities within specific stream ecosystems. Includes a weekend field trip with the student paying own expenses. Credit may be earned in BIO 119 or BIO 219 but not both. (30-0)

**BIO 221 Nature Study 4 Sem Hrs**

Prerequisite: BIO 111 recommended. Designed to introduce students to identification of local flora and fauna. Investigates relationships of these organisms to student's environment. (45-30)

**BIO 230H Physical Anthropology and Archeology - Honors 4 Sem Hrs**

Prerequisites: LEVEL 5 READING and LEVEL 3 WRITING and permission of the Honors Office. Introduces the origin and evolution of humankind's physical and cultural development. Emphasizes the evidence and theories of human evolution and a survey of Old World and New World archeology. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in only one of SOC 230, SOC 230H, BIO 230, or BIO 230H. (60-0)

**BIO 230      Physical Anthropology and Archeology      4 Sem Hrs**

Prerequisites: READING LEVEL 3 or WRITING LEVEL 3. Introduces the origin and evolution of humankind's physical and cultural development. Emphasizes the evidence and theories of human evolution and a survey of Old World and New World archeology. Credit may be earned in only one of SOC 230, SOC 230H, BIO 230, or BIO 230H, but not both. (60-0)

**BIO 240      Human Anatomy      4 Sem Hrs**

Prerequisite: BIO 171 or permission of instructor. The anatomy of the human body is presented on an integrated regional basis, supplemented by relevant histological, embryological, and functional considerations. The laboratory emphasizes regional dissections of the cat. Designed to meet the needs of biology majors and pre-professional science curricula, including all transfer health-related fields. (45-45)

**BIO 241      Physiology      4 Sem Hrs**

Prerequisite: BIO 171 or BIO 240 or permission of instructor. Background in anatomy and chemistry is desirable, but not required. Provides students with an introduction to the functional integration of the major organ systems of animals, with special emphasis on the human body. Places emphasis on the ways in which the various systems interact to maintain homeostasis of the individual. Illustrates through laboratory experiments both classical and modern approaches to the physiology of various organ systems. (45-60)

**BIO 268      International Studies in Biology      1-4 Sem Hrs**

Provides a biologic interpretation of selected world regions with emphasis on natural history, flora and fauna, and ecological relationships. Includes class lectures, individual consultation, and international field study. Expenses for the field study are the responsibility of the student. (15-60,0)

**BIO 272      Integrated Biology Review for Teachers      3 Sem Hrs**

Requires previous exposure to college-level chemistry and biology for this review course. Prepares potential teachers for the Michigan Test for Teacher Certification (MTTC). Covers topics such as the scientific method, cell types and cellular function, evolutionary changes and inheritance, the classification of living things, ecological principles, and ecosystems. Uses a combination of cooperative learning techniques, debates, discussion, group activities, a learning portfolio, a poster presentation, individual presentations, and case studies. (45-0)

**BIO 274      Introduction to Biotechnology      2 Sem Hrs**

Prerequisites: CHM 111 and BIO 171 or permission of instructor. Gives a detailed look at cell and molecular biology with a focus on biotechnology. Explores the following topics: regulation of gene expression and development, recombinant DNA, gene cloning, PCR, DNA sequencing and profiling, gene therapy, protein purification, cell culture, cancer and the use of model organisms. Designed for students interested in careers in biotechnology, biochemistry, medicine or pharmacy. Meets requirements of Ferris State University's Bachelor of Science program in biotechnology. (30-0)

**BIO 290-299      Special Projects in Biology**

## Computer Aided Drafting

**CAD 114      Introduction to CAD      2 Sem Hrs**

Prerequisites: Either DRF 104, 105, 121, ARC 105, or SKDR 101. CST 103 suggested or basic knowledge of the Windows Operating System. Introduces 2D CAD drawing, including basic drawing and editing commands as related to architectural, mechanical and civil applications. Studies CAD system interface, hardware, a current operating system, file management techniques, creating templates, creating and modifying geometry, dimension and text styles, block and external reference insertion, model space/paper space layouts, and plotting techniques. Credit may be earned in CAD114 or SKCA114 but not in both. (30-15)

**CAD 120      Introduction to CAM      3 Sem Hrs**

Prerequisites: DRF 104 or DRF 105 or SKDR 101; and CST 103 or CAD 114; or permission of instructor. Introduces the basics in computer geometry creation including line, arc, curve creation and manipulation. Gives a foundation to build on advanced CAD/CAM techniques. Instructs students on file transfer systems from CAD to CAM with emphasis on proper drawing techniques, including file type-save-transfer. Projects will be drawn, checked and created on appropriate equipment. Shows links between CNC machines on the shop floor and their relationship with the design process. Generates code from created drawings to be run on Computer Numerical Controlled equipment. Credit may be earned in CAD 120 or SKCA 120 but not in both. (30-30)

**CAD 214      CAD Techniques      3 Sem Hrs**

Prerequisites: CAD 114 and either DRF 104 or DRF 105 or DRF 121. Uses CAD software to model three-dimensional surfaces and solids. Extends CAD skills including rendering and advanced dimensioning techniques and build increased efficiency by creating attributes, generating bills of materials and creating custom menus. Includes an introduction to LISP and extended file manipulation as well as additional CAD software. (45-0)

**CAD 226      3D Parametric Solid Modeling      3 Sem Hrs**

Prerequisite: CAD 114. Develops skills in the use of 3D parametric solid modeling software. Converts solid models to 2D multi-view drawings and generates assembly and animation files. Culminates in Rapid Prototyping project and final presentation. (45-0)

**CAD 290-299      Special Projects in Computer Aided Drafting**

## Child Development

**CD 109      Introduction to the Educational Paraprofessional      2 Sem Hrs**

Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Introduces the role of the educational paraprofessional in a classroom setting. Prepares for work with a diverse population while assisting in implementing curriculum, facilitating classroom activities, and working with special needs students. Identifies the skills necessary to work well with a team of teachers, administrators, and other professionals. Requires a service learning project. (30-0)

**CD 110      Infant/Toddler Development      4 Sem Hrs**

Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Prerequisite or Corequisite: CD 111. Introduces the skills needed to interact with infants and toddlers as a teacher in a professional capacity and includes observing and participating with these specialized populations and their teachers. Identifies curriculum methods used to enhance growth in all developmental areas, and skills required to work with parents to foster basic early learning enhancement. Requires volunteering 3 hours per week for a total of 30 contact hours in an approved, public, child development program during the main portion of the day. (45-30)

**CD 111      Introduction to Early Childhood Education      3 Sem Hrs**

Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Introduces the field of early childhood education for ages birth-8. Provides an overall view of classroom goals, types of programs, teaching techniques and professionalism. Defines Michigan licensing laws for programs. (45-0)

**CD 112      Learning Center Activities      3 Sem Hrs**

Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Prerequisite or Corequisite: CD 111. Provides the basic curriculum and organizational skills needed to work in an early childhood program. Identifies, develops and presents developmentally appropriate activities for the early childhood classroom. (45-0)

**CD 113      Child Guidance Strategies      4 Sem Hrs**

Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Introduces basic skills needed to interact with young children in a positive manner. Identifies instances of growth-producing and/or growth-restricting child behavior and the capability to recognize, interpret and apply a variety of positive guidance techniques. Introduces the preschool and primary classroom, observing and participating with these specialized populations and their teachers. Requires 3 hours a week for a total of 30 hours volunteering in an approved, public, child development program during the main portion of the day. (45-30)

**CD 114      Theories of Child Development      3 Sem Hrs**

Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Prerequisite or Corequisite: CD 111. Introduces human growth and development from birth through adolescence. Emphasizes observation techniques and theories of human development. (45-0)

**CD 115P      Introductory Preschool Practicum      3 Sem Hrs**

Prerequisites or Corequisites: CD 111, CD 112, CD 113. Introduces the early childhood classroom, observing and participating with young children and their teachers. Requires approximately nine hours a week volunteering in an approved early childhood program during the main teaching portion of the day, for a total of 90 hours. (27-90)

**CD 116      Diversity and Families in Early Childhood Education      3 Sem Hrs**

Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Introduces the background needed to work with parents of children in early childhood programs. Explores diversity in social class, economic resources, cultural customs, and traditions. (45-0)

**CD 117      Student Teaching Practicum      6 Sem Hrs**

Prerequisite: CD 110, 114, 115P. Prerequisites or Corequisites: CD 116 and PSY 223. Focuses on teaching developmentally appropriate activities while volunteering in an approved preschool or kindergarten classroom. Application of developmentally appropriate practice and theory during 12 hours per week in an approved student teaching classroom, for a total of 150 contact hours. (37.5-150)

**CD 210      Child Care Program Management      3 Sem Hrs**

Prerequisites: CD 117 and LWT165. Provides the student with the capstone course for obtaining an Associate of Applied Arts Degree in Child Development. Details all facets of program management in a licensed facility. Introduces the student to developing techniques used in writing a parent program handbook, as well as a staff manual of policies and procedures. Instructor permission required to enroll in this course. (45-0)

**CD 290-299      Special Projects in Child Development****Co-operative Education (See also ACE)****CED 205      Cooperative Education Criminal Justice      2 Sem Hrs**

Prerequisite: CED 106 or permission of instructor. Continues from second-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)

**CED 206      Cooperative Education Criminal Justice      2 Sem Hrs**

Prerequisite: CED 205 or permission of instructor. Continues from third-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)

**CED 215      Cooperative Education Broadcasting      2 Sem Hrs**

Prerequisite: CED 116 or permission of instructor. Continues from second-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)

**CED 216      Cooperative Education Broadcasting      2 Sem Hrs**

Prerequisite: CED 215 or permission of instructor. Continues from third-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)

**CED 225      Cooperative Education Business      2 Sem Hrs**

Prerequisite: CED 126 or permission of instructor. Continues from second-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)

**CED 226      Cooperative Education Business      2 Sem Hrs**

Prerequisite: CED 225 or permission of instructor. Continues from third-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)

**CED 235      Cooperative Education III      2 Sem Hrs**

Prerequisite: CED 136 or permission of instructor. Continues from second-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)

**CED 236      Cooperative Education IV      2 Sem Hrs**

Prerequisite: CED 235 or permission of instructor. Continues from third-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)

**CED 245      Cooperative Education Electronic Technology      2 Sem Hrs**

Prerequisite: CED 146 or permission of instructor. Continues from second-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)

<b>CED 246</b>	<b>Cooperative Education Electronic Technology</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 245 or permission of instructor. Continues from third-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 255</b>	<b>Cooperative Education Mechanical Technology</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 156 or permission of instructor. Continues from second-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 256</b>	<b>Cooperative Education Mechanical Technology</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 255 or permission of instructor. Continues from third-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 265</b>	<b>Cooperative Education Office Professional</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 166 or permission of instructor. Continues from second-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 266</b>	<b>Cooperative Education Office Professional</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 265 or permission of instructor. Continues from third-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 275</b>	<b>Cooperative Education Pre-Engineering</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 176 or permission of instructor. Continues from second-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 276</b>	<b>Cooperative Education Pre-Engineering</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 275 or permission of instructor. Continues from third-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 285</b>	<b>Cooperative Education Science</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 186 or permission of instructor. Continues from second-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 286</b>	<b>Cooperative Education Science</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 285 or permission of instructor. Continues from third-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		

<b>CED 290-299</b>	<b>Special Projects in Cooperative Education</b>	
<b>CED 295A</b>	<b>Cooperative Education Technology Management</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 196A or permission of instructor. Continues from second-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 295B</b>	<b>Cooperative Education Design Technology</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 196B or permission of instructor. Continues from second-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 295C</b>	<b>Cooperative Education Construction Technology</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 196C or permission of instructor. Continues from second-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 296A</b>	<b>Cooperative Education Technology Management</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 295A or permission of instructor. Continues from third-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 296B</b>	<b>Cooperative Education Design Technology</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 295B or permission of instructor. Continues from third-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		
<b>CED 296C</b>	<b>Cooperative Education Construction Technology</b>	<b>2 Sem Hrs</b>
Prerequisite: CED 295C or permission of instructor. Continues from third-semester cooperative education with additional responsibilities at the worksite. The employer/supervisor and the college coordinator make evaluations. Class is a five-hour professional development seminar. (5-225)		

## Chemistry

<b>CHM 101</b>	<b>General Chemistry I</b>	<b>5 Sem Hrs</b>
Prerequisite: MATH LEVEL 3. Provides fundamental principles, including atomic theory, periodic properties, states of matter, laws of chemistry combination, nomenclature, and chemical phenomena of interest to daily living. Designed as a preparation to CHM 111 for those students with no previous work in chemistry and to satisfy a science requirement in certain curricula. (75-30)		
<b>CHM 105</b>	<b>Technical Chemistry I</b>	<b>5 Sem Hrs</b>
Prerequisite: MATH LEVEL 3. Provides basic principles of general chemistry with an emphasis on resource-based and hands-on learning. Includes chemical and physical properties of matter, measurement and chemical calculations, chemical terminology, reactions and processes, and use of industrial and field testing equipment. Integrates computer skills into the course including word processing, spreadsheet, email, and web use. (60-60)		

**CHM 106      Technical Chemistry II      5 Sem Hrs**

Prerequisite: Completion of CHM 101 or CHM 105 with a minimum grade of C (2.0). Provides inorganic and organic chemistry knowledge and technical skills' foundation essential for employment as a technician in a variety of chemistry-based professions. Includes analytical instrumentation use. (60-60)

**CHM 107      Chemistry For Engineering Technology      4 Sem Hrs**

Prerequisite: MATH LEVEL 6. Develops a foundation in chemistry for engineering technicians and designers so they can make better informed decisions. Builds connections of understanding between engineering material selection, design, and manufacturing processes. Uses fundamental principles including atomic theory, structure of metals and polymers, periodic properties, states of matter, gas laws, nomenclature, and common chemical reactions to make connections.(45-30)

**CHM 111      General and Inorganic Chemistry I      5 Sem Hrs**

Prerequisite: MATH LEVEL 4 and either high school chemistry or CHM 101 with a minimum grade of C (2.0). Emphasizes an in- depth study of the theories and principles of atomic structure bonding, stoichiometry, states of matters, and properties of solutions. Required for students who intend to enroll for more than one year of chemistry. Meets the needs of chemistry majors. Credit may be earned in CHM 111 or CHM 111H but not both. (60-45)

**CHM 111H      General and Inorganic Chemistry I - Honors      5 Sem Hrs**

Prerequisite: READING LEVEL 5, WRITING LEVEL 3, MATH LEVEL 4 and either high school chemistry or CHM 101 with a minimum grade of C (2.0) and permission of the Honors Office. Emphasizes an in-depth study of the theories and principles of atomic structure bonding, stoichiometry, states of matters, and properties of solutions. Required for students who intend to enroll for more than one year of chemistry. Meets the needs of chemistry majors. Practices intellectual curiosity and applies it in independent ways to deepen understanding of course material. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in either CHM 111 or CHM 111H, but not in both. (60-45)

**CHM 112      General and Inorganic Chemistry II      5 Sem Hrs**

Prerequisite: Completion of CHM 111 with a minimum grade of C (2.0). Continuation of CHM 111. Introduces chemical equilibria in water, including ionization solubility, complex ion, acid-base phenomena, and oxidation-reduction equilibria. Discusses the principles of electrochemistry, chemical thermodynamics, chemical kinetics and special topics such as the descriptive study of metals and non-metals. Meets the needs of chemistry majors. Credit may be earned in CHM 112 or CHM 112H but not in both. (60-45)

**CHM 112H      General and Inorganic Chemistry II - Honors      5 Sem Hrs**

Prerequisite: READING LEVEL 5, WRITING LEVEL 3 and completion of CHM 111 with a minimum grade of C (2.0) and permission of the Honors Office. Continuation of CHM 111. Introduces chemical equilibria in water, including ionization solubility, complex ion, acid-base phenomena, and oxidation-reduction equilibria. Discusses the principles of electrochemistry, chemical thermodynamics, chemical kinetics and special topics such as the descriptive study of metals and non-metals. Practices intellectual curiosity and applies it in independent ways to deepen understanding of course material. Meets the needs of chemistry majors. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in CHM 112 or CHM 112H but not both. (60-45)

**CHM 210      Organic Chemistry I      4 Sem Hrs**

Prerequisite: Completion of or concurrent enrollment in CHM 112. Provides the basic principles of organic chemistry, including functional groups, nomenclature, mechanisms, reaction types and various reagents. Meets the needs of students in the medical and health fields, engineering fields, and science majors. (60-0)

**CHM 210L      Organic Chemistry I Laboratory      1 Sem Hr**

Prerequisite: Completion of or concurrent enrollment in CHM 210. Provides the basic principles of organic laboratory techniques. Includes note keeping, filtrations, recrystallizations, extractions, distillation methods, spectroscopic methods, chromatographic methods, chemical searches, and report writing. Recommended to be taken concurrently with CHM 210. (0-60)

**CHM 220      Organic Chemistry II      4 Sem Hrs**

Prerequisite: Completion of CHM 210 with a minimum grade of C (2.0). Provides a continuation of CHM 210 with reactions, mechanisms and nomenclature of carbonyl groups, carbohydrates, lipids, proteins and nucleotides. Includes special topics with applications in the medical, pharmaceutical and industrial fields. Meets the needs of students in medical and health fields, engineering fields, and science majors. (60-0)

**CHM 220L      Organic Chemistry II Laboratory      1 Sem Hr**

Prerequisites: Completion of CHM 210LW with a minimum grade of C (2.0). Provides a continuation of CHM 210L, applying the basic principles of synthesis and analysis to various challenging reactions, using established techniques. Recommended to be taken concurrently with CHM 220. (0-60)

**CHM 221      Organic Biochemistry      3 Sem Hrs**

Prerequisite: Either completion of CHM 111 or CHM 101 with a minimum grade of B (3.0). Includes the structure and properties of the major classes of organic compounds, with emphasis on characteristic reactions of various functional groups, as well as fundamental concepts of biochemistry and the interrelationships of biologically active compounds with major metabolic pathways. (45-0)

**CHM 222L      Organic Biochemistry Laboratory      1 Sem Hr**

Prerequisite: Completion of or concurrent enrollment in CHM 221. Provides a variety of perspectives using laboratory experiments to supplement and enhance the student's background in organic and biochemistry. Includes extractions, syntheses, separations, analyses, comparison of reactions, and metabolic studies. (0-45)

**CHM 230      Chemical Analysis/Instrumentation      4 Sem Hrs**

Prerequisite: MATH LEVEL 6 and either completion of CHM 106 or completion of/concurrent enrollment in CHM 210 or permission of instructor. Presents the theory and practice of basic chemical preparation and analysis as performed in research and/or industrial settings. Emphasizes safety, detailed and accurate record keeping, data handling, and report writing. Benefits all science majors in Biology, Chemistry, Engineering, and other Applied Science Curricula. (45-45).

**CHM 231      Troubleshooting for Analytical Instrumentation      1 Sem Hr**

Prerequisite: Completion of or concurrent enrollment in CHM 210, CHM 221, or CHM 230. Provides an overview of techniques and documentation required for troubleshooting analytical instrumentation in an industrial setting. Includes systematic approach to diagnosis of instrument failures as well as hands-on maintenance and repair operations. Beneficial to all science and technology majors. (15-0)

**CHM 290-299      Special Projects in Chemistry**

## Criminal Justice

- CJ 101 Police Recruit Training 6 Sem Hrs**  
Prerequisite: Must be currently employed full-or part-time by a law enforcement agency, or have completed an Associate Degree upon entry, or will receive an Associate Degree upon completion of the Basic Police Training Academy. OAT 153, LW 280, and LWT 175 must be taken concurrently. Provides the basic training necessary to assume the duties of a police officer in preparation for MCOLES (Michigan Commission on Law Enforcement Standards) state certification. Includes constitutional law, criminal law, laws of arrest, search and seizure, investigative techniques, first aid, firearms, motor vehicle laws, defensive tactics, and patrol techniques. Contact the Delta Police Academy for information concerning admission requirements, enrollment, and current course fees. To obtain an Associate Degree in Criminal Justice, a student must earn a grade of C (2.0) or better in this course. (605-0)
- CJ 110 Introduction to Criminal Justice 3 Sem Hrs**  
Prerequisite: READING LEVEL 2 or WRITING LEVEL 2. Introduces and provides orientation to the field of law enforcement and criminal justice. Explores major areas including: the philosophical and historical background of the field; types of courts and agencies in the field and their responsibilities; administrative and technical problems in the field and an understanding of the Bill of Rights Amendments to the Constitution. (45-0)
- CJ 111 Police Administration 3 Sem Hrs**  
Prerequisite: READING LEVEL 2 or WRITING LEVEL 2. Analyzes the functional divisions of the modern police department. Studies management operations, coordination of activities, communications, recruiting, training, public relations, and looks at the future of law enforcement. (45-0)
- CJ 112 Police Operations 3 Sem Hrs**  
Prerequisite: READING LEVEL 2 or WRITING LEVEL 2. Studies patrol as a basic police function, including both the theoretical and functional aspects. Covers the responsibilities of, purpose, methods, types and means of police patrol. Exams patrol strength layout, beats, technological advancements affecting the patrol officer. (45-0)
- CJ 130 Introduction to Corrections 3 Sem Hrs**  
Prerequisite: READING LEVEL 2 or WRITING LEVEL 2. Provides an understanding of the agencies and institutions that have legal authority over the custody and supervision of offenders. Discusses major areas including the history and development of corrections, community based corrections, local, state and federal institutions, and institutional administration. Explores correctional treatment of female, male, and juvenile offenders. Covers the role of corrections in the total system of criminal justice. (45-0)
- CJ 132 Client Relations in Corrections 3 Sem Hrs**  
Prerequisite: READING LEVEL 2 or WRITING LEVEL 2. Develops an awareness of the effects of culture and discrimination on the attitude formation of individuals, to assist in identifying various professional responses to human behavior. (45-0)
- CJ 135 Correctional Institutions and Facilities 3 Sem Hrs**  
Prerequisite: READING LEVEL 2 or WRITING LEVEL 2. Provides an overview of correctional institutions and facilities. Covers topics including the purpose of prisons and correctional institutions, treatment and rehabilitating programs, management and organization of correctional institutions, custodial care, safety and security, and future concerns. (45-0)
- CJ 150 Introduction to Emergency Dispatch 1 Sem Hr**  
Introduces the history, structure and roles of the emergency dispatch center. Explains major responsibilities and skills needed for career as emergency telecommunicator. Examines associated legal and social issues and offers resolutions to stress and burnout issues related to field. (15-0)

- CJ 182 Introduction to Security 3 Sem Hrs**  
Prerequisite: READING LEVEL 2 or WRITING LEVEL 2. Introduces the field of security and orients student to career options. Explores origins and development of security, proprietary security, risk analysis, fire protection, safety, internal theft control, insurance cargo security, computer security, institutional security, and the future of security. (45-0)
- CJ 187 Current Issues in Security 3 Sem Hrs**  
Prerequisite: READING LEVEL 2 or WRITING LEVEL 2. Surveys current issues in security: terrorism, espionage, substance abuse, employee theft, computer vulnerabilities, and protection of information. (45-0)
- CJ 210 Introduction to Criminal Investigation 3 Sem Hrs**  
Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Introduces criminal investigation procedures: theory of an investigation, conduct at crime scenes, collection and preservation of physical evidence, methods used in police science laboratory, finger prints, ballistics, documents, serology, photography, and related forensic sciences. (45-0)
- CJ 211 Private Security and Investigative Methods 3 Sem Hrs**  
Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Introduces private security and investigative methods, including public record searching, surveillance, background investigations, interviewing techniques, fair credit reporting act, computer based investigations and video evidence. (45-0)
- CJ 215 Introduction to Homeland Security 3 Sem Hrs**  
Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Explains the basic concepts of homeland security. Examines domestic and foreign terrorist violence aimed at achieving radical change in society. Explores governmental reaction to homeland security needs and threats against interests of the United States. (45-0)
- CJ 220 Crime Laboratory Techniques 3 Sem Hrs**  
Prerequisite: READING LEVEL 3 or WRITING LEVEL 3 and CJ 210 with a "C" or better. Introduces scientific criminal investigation and criminalistics: proper handling and transmittal of evidence to the crime laboratory, laboratory aids that are available, and understanding of the probabilities related to examination of physical evidence. (45-15)
- CJ 233 Client Growth and Development 3 Sem Hrs**  
Prerequisite: READING LEVEL 2 or WRITING LEVEL 2. Explores the various factors involved in the development and growth of the criminal. Discusses the biological, environmental, and psychological influences. Reviews specific problems such as sexual, substance abuse and medical disorders. Explores intervention strategies. (45-0)
- CJ 237 Jails & Local Detention 3 Sem Hrs**  
Prerequisite: READING LEVEL 3 or WRITING LEVEL 3 and CJ 110 or CJ 130 with a "C" or better. Explains the operations of jails and local detention facilities and their unique role in the criminal justice system. Covers Michigan jail and lockup operations, as well as their organization, management, and emerging issues confronting American jails. Reviews differences in jails and prisons regarding operations and differing clientele. (45-0)
- CJ 238 Legal Issues in Corrections 3 Sem Hrs**  
Prerequisite: READING LEVEL 2 or WRITING LEVEL 2. Studies the primary legal issues correctional personnel will be entrusted to enforce and safeguard. Covers an overview of U.S. Constitutional law, the court process from arrest through trial, the structure and function of the S.S. and state courts, and prisoner rights. (45-0)
- CJ 250 The Juvenile Offender 3 Sem Hrs**  
Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Studies theories of causation as applied to juvenile delinquency. Examines the work of youth agencies. Explains Michigan Juvenile Law and constitutional safeguards for juveniles. Reviews new development in the prevention of juvenile crime. (45-0)

**CJ 253      Emergency Dispatch Operations      3 Sem Hrs**

Prerequisites: CJ 112, CJ 150, FST 101, SPH 212. Introduces the mechanical, technical, and general operations of an emergency dispatch center. Orients to call-taking and radio dispatching utilizing technical equipment such as multi-line phone systems, wireless technology, waves and frequencies, various computer systems, and generally accepted operational procedures. Discusses various resources available and utilized by emergency dispatchers. (45-0)

**CJ 270      Evidence and Criminal Procedure      3 Sem Hrs**

Prerequisite: READING LEVEL 3 or WRITING LEVEL 3 and any one course from the Criminal Justice Discipline or any POL 103, POL 104, or POL 212 course with a "C" or better or permission of the instructor. Studies the rules of evidence as it affects the criminal justice process. Includes an overview of criminal procedure as it pertains to the rules of arrest, search, and seizure, which regulate law enforcement, and protects citizen's rights of privacy and presumed innocence. (45-0)

**CJ 271      Criminal Law      3 Sem Hrs**

Prerequisite: READING LEVEL 3 or WRITING LEVEL 3 and any one course from the Criminal Justice Discipline or any POL 103, POL 104, or POL 212 course with a "C" or better or permission of the instructor. Examines elements and proof in crime of frequent concerns in law enforcement with reference to principal rules of criminal liability. Considers importance of criminal law at the enforcement level, from crime prevention to courtroom appearance. (45-0)

**CJ 275      Probation and Parole      3 Sem Hrs**

Prerequisite: READING LEVEL 3 or WRITING LEVEL 3 and CJ 130 with a "C" or better. Examines the process of probation and parole. Emphasizes management and supervision of individuals involved in the probation and parole process including interviewing, counseling techniques, and preparing court reports such as progress reports and pre-sentence investigations. (45-0)

**CJ 280      Internship in Criminal Justice      3 Sem Hrs**

Prerequisite: Minimum 15 credits Criminal Justice courses and permission of faculty. Field placement in a criminal justice setting (police department, court, juvenile center, etc.). An attempt will be made to find field education placements compatible with students' interests and agency needs. (10-160)

**CJ 282      Internship in Emergency Dispatch      3 Sem Hrs**

Prerequisites: CJ 253. Provides experience in day-to-day operations of varied emergency dispatch centers. Provides 24 hours of work experience at an approved emergency dispatch center, followed by 24 hours of work experience at a second approved emergency dispatch center. Requires working a varying shift rotation to experience a variety of job responsibilities as assigned by each emergency dispatch site. Provides work experiences as active emergency dispatcher during the course of the internship. Must have approval from the program coordinator prior to beginning internship at either selected site. Must also pass a background check by the interning agency and/or fulfill any other predetermined process required by the department. (0-45)

**CJ 290-299      Special Projects in Criminal Justice**

## Certified Nursing Assistant

**CNA 100L      Certified Nursing Assistant Lab      1.3 Sem Hrs**

Prerequisites: READING LEVEL 5, WRITING LEVEL 3, and MATH LEVEL 2. Corequisite: CNA 100W. Introduces clinical skills and experiences related to basic patient care and activities of daily living. Utilizes these skills in a variety of health care settings, such as long-term, home health, and acute care facilities. Successful completion of the course with a grade of "C" or better entitles the student for eligibility to take a competency evaluation exam to attain state certification as a Certified Nursing Assistant. A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (0-60)

**CNA 100      Certified Nursing Assistant Training****3.7 Sem Hrs**

Prerequisites: READING LEVEL 5, WRITING LEVEL 3, and MATH LEVEL 2. Corequisite: CNA 100LW. Introduces theory related to basic patient care and activities of daily living. Successful completion of the course with a grade of "C" or better entitles the student for eligibility to take a competency evaluation exam to attain state certification as a Certified Nursing Assistant. A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit may be earned in CNA 100 or NHA 111, but not both. (56-0)

**CNA 290-299      Special Projects in Certified Nursing Assistant**

## Computer Numerical Control

**CNC 162      Computer Numerical Control Theory      4 Sem Hrs**

Prerequisites: MS 113 or MS 114 or SKTR 181, and SKMA 103, or MTH 103 or MT 110. Uses various methods, such as a text editor, machine control unit, and CAD/CAM (MasterCam) to produce alpha-numeric code (G-Code) which will run CNC machinery. Uses blueprints to problem solve and program both point-to-point and complex contours on machining centers and turning centers. Discusses machines with 2, 3, 4, and 5 axis controls. Emphasizes common formats of programming. Discusses machine tool controllers including HAAS, Funac, OKK, Fadal and Okuma. Includes hands-on activities. Credit may be earned in either CNC 162 or SKCN 162 but not in both. (40-20)

**CNC 216      CNC with Machining Applications      4 Sem Hrs**

Prerequisites: CAD 120 or SKCA 120, MS 114 or SKTR 182, CNC 162 or SKCN 162, MS 130 or concurrent enrollment in MS 130, or prior experience in CAD, machine tools, CNC programming, and personal computers. Emphasizes the programming methodology for producing quality parts using the CNC machines. Discusses conversational programming language with secondary emphasis on tooling setups, part setups, and machining. Utilizes horizontal and vertical machining center for program testing. Credit may be earned in SKCN 216 or CNC 216 but not both. (0-100)

**CNC 225      Mastercam      4 Sem Hrs**

Prerequisites: CAD 120 or SKCA 120, and CNC 162 or SKCN 162 or instructor permission. Teaches the advanced concepts of CNC programming for lathe work, mill 3 and 4 axis work, and/or other machinery, shop floor programming, and the principles of CNC operations. Emphasizes various machining operations, accompanied by demonstrations, student programming, and hands-on setup and machine operation. Emphasizes the creation of error free part programs using the MASTERCAM programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system, or wire EDM. Credit may be earned in either SKCN 225 or CNC 225 but not in both. (0-100)

**CNC 285      Computer Numerical Control Capstone      4 Sem Hrs**

Prerequisites: Permission of instructor. Demonstrates application-based activities that tie a majority of your previous manufacturing learning together. Incorporates skills learned in drafting, CAD, manual and CNC machine tools, and CAM to complete the capstone project. Applies critical thinking and spatial analysis abilities in the processing of this project. Applies the fundamentals of ID tool design and tool making, fixture building, and geometric dimensioning and tolerancing (GD&T). Credit may be earned in CNC 285 or SKCN 285 but not in both. (30-60)

**CNC 290-299      Special Projects in Computer Numerical Control**

## Communication

### **COM 112C Fundamentals of Oral Communication 3 Sem Hrs**

Offers training in the fundamental processes of oral expression, with an emphasis on speaking and listening as the coordination of perception and expression. Practices the basic principles, components, and skills for the development and delivery of presentations in specific communication situations. Intended to only be taken in a learning community combination. Credit may be earned in any SPH 112 course or any COM 112 course, but not both. (45-0)

### **COM 112H Fundamentals of Oral Communication - Honors 3 Sem Hrs**

Prerequisites: READING LEVEL 5 and WRITING LEVEL 3 and permission of the Honors Office. Offers training in the fundamental processes of oral expression, with an emphasis on speaking and listening as the coordination of perception and expression. Practices the basic principles, components, and skills for the development and delivery of presentations in specific communication situations. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in any SPH 112 course or any COM 112 course, but not both. (45-0)

### **COM 112 Fundamentals of Oral Communication 3 Sem Hrs**

Prerequisites: READING LEVEL 3 or WRITING LEVEL 3. Offers training in the fundamental processes of oral expression, with an emphasis on speaking and listening as the coordination of perception and expression. Practices the basic principles, components, and skills for the development and delivery of presentations in specific communication situations. Credit may be earned in any SPH 112 course or any COM 112 course, but not both. (45-0)

### **COM 114H Interpersonal Communication - Honors 3 Sem Hrs**

Prerequisites: READING LEVEL 5 and WRITING LEVEL 3 and permission of the Honors Office. Introduces the processes of perception, non-verbal behavior, self-concept, roles, and culture on human interaction in varying social settings. Increases student competency as communicators in social settings. Applies various concepts of communication behavior in the classroom. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in any SPH 114 course or any COM 114 course, but not both. (45-0)

### **COM 114 Interpersonal Communication 3 Sem Hrs**

Prerequisites: READING LEVEL 3 or WRITING LEVEL 3. Introduces the processes of perception, non-verbal behavior, self-concept, roles, and culture on human interaction in varying social settings. Increases student competency as communicators in social settings. Applies various concepts of communication behavior in the classroom. Credit may be earned in any SPH 114 course or any COM 114 course, but not in both. (45-0)

### **COM 202 Oral Communication for Managers 3 Sem Hrs**

Prerequisites: READING LEVEL 3 and WRITING LEVEL 3. Focuses on organizational behavior; management behavior styles and team building; interpersonal communication; appraisal, disciplinary, motivational and counseling interviews; listening and nonverbal behavior; public speaking; and leadership and consensus decision making. Emphasizes practical skills within the organization. (45-0)

### **COM 212 Listening 3 Sem Hrs**

Prerequisites: READING LEVEL 3 and WRITING LEVEL 3. Focuses on the theory, behavior, and skills of listening. Include discussion of: listener/speaker responsibility; physiological and psychological processes of listening; barriers and control methods; improvements; and the five types of listening devoted to nonverbal behavior with regard to seeing as listening. (45-0)

### **COM 214 Small Group Communication 3 Sem Hrs**

Prerequisite: READING LEVEL 3 and WRITING LEVEL 3 and a previous communication course or permission of the instructor. Explains discussion as a means to better understanding and action in human affairs and develops attitudes and skills which enable people to participate in discussion competently. Studies group leadership. (45-0)

### **COM 215 Introduction to Theatre 3 Sem Hrs**

Prerequisites: READING LEVEL 3 or WRITING LEVEL 3. Offers insight into all the various aspects of theatrical production. Observes and critiques dramatic productions whether on stage, film, or the T.V. screen. Analyzes plays and experiences in acting, directing, scenery, and lighting. (45-0)

### **COM 216 Theatre History 3 Sem Hrs**

Prerequisites: READING LEVEL 3 and WRITING LEVEL 3. Introduces the student to the various historical areas of the theatre, from the ancient Greeks to the present. Emphasizes the development of the physical theatre, representative playwrights, and the development of actor and the director. (45-0)

### **COM 222 Introduction to Acting 3 Sem Hrs**

Prerequisites: READING LEVEL 3 or WRITING LEVEL 3. Introduces the fundamentals of stage terminology, stage movement, use of voice, and believable character creation for an audience in both improvisational and written scenes. Emphasizes preparation and presentation of scenes before a classroom audience. (45-0)

### **COM 224 Nonverbal Communication 3 Sem Hrs**

Prerequisites: READING LEVEL 3 and WRITING LEVEL 3. Focuses on nonverbal communication as it relates to interpersonal social, business and professional behavior. Analyzes kinesics, facial affect, eye contact, body movement and posture, physical characteristics, haptics, chronemics, proxemics, artifacts and environment. Discusses the prevalent theories underlying nonverbal behavior. (45-0)

### **COM 235 Principles of Persuasion 3 Sem Hrs**

Prerequisites: READING LEVEL 3 and WRITING LEVEL 3, and COM 112 or COM 114, or instructor permission. Introduces the study and practice of persuasion focusing on the dual roles as producers and consumers of persuasive messages; examines persuasion in a variety of contexts using both the rhetorical and behavioral science traditions; applies theory and research to practical situations; develops strategies for constructing effective and ethical persuasive messages. (45-0)

### **COM 236 Advanced Oral Communication 3 Sem Hrs**

Prerequisite: READING LEVEL 3 and WRITING LEVEL 3 and successful completion of COM 112W with a grade of "C" or better. Develops an advanced understanding of theories and strategies in the delivery of oral presentations. Develops advanced speaking skills from an historical and contemporary rhetorical context. Emphasizes analyzing and practicing speech discourse conventions, along with advanced information literacy skills as a key to effective delivery of speeches. (45-0)

### **COM 244 Family Communication 3 Sem Hrs**

Prerequisites: READING LEVEL 3 and WRITING LEVEL 3. Provides students with an understanding of interpersonal communication in the context of family systems. Studies family communication through the lens of family systems theory, rules, and interaction theory. Provides students the opportunity to apply and operationalize the theories through various assignments related to their family of origin, existing family, and family configurations in other cultures. (45-0)

### **COM 245 Intercultural Communication 3 Sem Hrs**

Prerequisites: READING LEVEL 3 and WRITING LEVEL 3. Provides an analysis of issues associated with communicating with an emphasis on how communication is influenced by culture and how culture is influenced by communication. Utilizes concepts drawn from sociology, psychology, anthropology, and communication. Applies theories and research related to intercultural communication in order to increase understanding of the relationship between culture and communication and subsequently be able to communicate effectively with people of other cultural groups. (45-0)

### **COM 290-299 Special Projects in Communication**

## Chemical Process Industries

### **CPI 110 Introduction To Chemical Process Industries 2 Sem Hrs**

Concurrent enrollment in CPI 120 recommended. Provides overview of Chemical Process Industries and Chemical Technology with focus on the role of the process operator and the chemical technician. Introduces concepts of safety, regulation, laws affecting the job and the industry, and quality control. Includes study skills and attitudes necessary for study of science/technology as well as means of continuing professional and personal growth. Credit may be earned in CPI 110 or CT 100 but not both. (30-0)

### **CPI 120 Introduction To Process Operations 2 Sem Hrs**

Prerequisite: MATH LEVEL 5. Concurrent enrollment in CPI 110 recommended. Provides an overview of process operations including analysis of process flow sheets. Details description and analysis of operations as they involve reactors, distillation columns, heat exchangers, and other types of operations in the typical chemical plant. (30-0)

### **CPI 210 Basic Chemical and Unit Operations 4 Sem Hrs**

Prerequisite: Completion of PHY 101, PHY 111, or PHY 211 with a grade of "C" or better (A high school Physics course completed with a "C" or better within the last three years may also qualify.) and CPI 120 with a grade of "C" or better. Provides understanding of basic principles of process technology along with an introduction to the use and operations of standard process equipment used worldwide by process technicians. Includes principles of energy and heat, pressure, fluid flow, heat transfer as well as topics concerning quality control and unit operations. Provides operational experiences with valves, pumps, compressors, distillation towers, and other process equipment and instrumentation. (45-45)

### **CPI 220 Process Measurement 3 Sem Hrs**

Prerequisite: CPI 210 with a grade of "C" or better. Provides an understanding of process measurement methods and the application of process instrumentation. Includes discussion of pressure measurements, temperature measurement, flow measurement, product level measurement, and analytical measurement. (45-0)

### **CPI 230 Process Control 3 Sem Hrs**

Prerequisite: CPI 220 with a grade of "C" or better. Provides an introduction to basic process control concepts. Discusses controllers/control valves, instrument and process control, statistical process control (SPC), run and flow charts, quality systems, team concepts, and environmental health and safety issues. (45-0)

### **CPI 240 Process Troubleshooting 3 Sem Hrs**

Prerequisite: CPI 250 with a grade of "C" or better. Provides problem solving skills used to maintain and monitor process equipment employing cause and effect analyses, case studies, analytical techniques, and laboratory simulations. Involves troubleshooting unit problems, maintaining, monitoring, and inspecting equipment, placing and/or removing equipment in service, and working with others who operate and maintain processes (maintenance technicians; laboratory technicians; and engineering, administrative and construction personnel). (30-30)

### **CPI 250 Advanced Chemical Operations 4 Sem Hrs**

Prerequisites: CPI 230 with a grade of "C" or better. Provides hands-on simulations that demonstrate mechanical and measurement principles involved in the operation and control of chemical processes. Includes student/team operation of a process simulator under normal operating conditions as well as the operations of tanks, pumps, valves, heat transfer equipment, steam traps, filters, and process instrumentation. (45-30)

### **CPI 260 Process Operations Management 4 Sem Hrs**

Prerequisite: CPI 240 and CPI 250 with a grade of "C" or better. Provides capstone experience for chemical process operation students/technicians. Focuses on demonstrated student skills in the use of control charts; P&ID's; verification of systems, units, and equipment; and development of critical values for SPC. Provides opportunity for students to present plans (including PSM and environmental management systems) and procedures for start-up and run, shut down operations, and present results of pilot project run. Emphasizes the value and function of the team in process operations as well as quality control, and environmental health and safety issues (45-45)

### **CPI 290-299 Special Projects in Chemical Process Industries Courses**

## Computer Science & Info Tech

### **CST 091 Beginning Computer Windows Concepts 1 Sem Hr**

Provides the terminology needed to become familiar with computer hardware and software. Provides a first exposure to the Windows Operating system in a hands-on setting focusing on file and folder management. Assists those who lack familiarity with computer technology. This course does not count towards graduation. Credit may be earned in CST 091 or CST 092, but not both. (15-3)

### **CST 093 Beginning Internet Concepts 0.5 Sem Hr**

Presents the terminology needed to become familiar with the Internet. Provides a first exposure to the Internet in a hands-on setting. Assists those who lack familiarity with e-mail and searching the Web. Does not earn credit toward graduation. (7.5-1.5)

### **CST 094 Beginning Computer Applications Concepts 0.5 Sem Hr**

Prerequisite: CST 091 or instructor permission. Presents the terminology needed to become familiar with office applications. Provides a first exposure to Microsoft Office applications in a hands-on setting. Assists those who lack familiarity with Word Processing, Spreadsheets, and Presentation Graphics. Does not earn credit toward graduation. (7.5-1.5)

### **CST 103 Windows Foundations 1 Sem Hr**

Provides a basic introduction to the Microsoft Windows Operating System. Includes the creation of folders and use and review of the basic concepts of storage on floppy and hard disk. Introduces the basic features of Windows including menus, icons, dialog boxes, and the title and menu bars. Emphasizes the use of multi tasking. (15-0)

### **CST 104 Microsoft Word Foundations 1 Sem Hr**

Prerequisite: OAT 170 Keyboarding with a "C" (2.0) grade minimum or equivalent touch typing and computer background. Introduces Microsoft Word software. Teaches how to create, format, save, retrieve, edit, and print documents. (15-0)

### **CST 105 Outlook 1 Sem Hr**

Prerequisite: CST 103 or equivalent computer background. Introduces Microsoft Outlook and its e-mail, calendar, contacts, and tasks/notes components. Teaches how to send and receive e-mail, manage calendar activities, maintain contacts, and create tasks and notes. Also includes customization and integration of Outlook components. (15-0)

### **CST 106 Internet Foundations 1 Sem Hr**

Develops skills to access and use the Internet emphasizing easy information retrieval. Introduces essential Internet areas such as E-Mail and the use of Graphical Web Browsers. Credit may be earned in only one of the following: CST 106, CPS 160, CIS 160 or CIS 161. (15-0)

**CST 107 Microsoft Publisher 1 Sem Hr**  
Prerequisite: CST 104 Microsoft Word Foundations or OAT 171 Document Processing: Beginning or equivalent word processing background. Introduces the basics of using Microsoft Publisher to design and create publications for personal use and professional purposes. Teaches principles of publication design and layout, including formatting text, using graphic manipulation tools, applying color schemes and styles, and working with templates. (15-0)

**CST 110 Web Page Development Using HTML 1 Sem Hr**  
Prerequisite: CST 103 or equivalent and e-mail and Internet skills. Develops skills to create and maintain a basic Web page using HTML. Includes text formatting, lists, graphics insertion, tables, and the use of links to other pages. (15-0)

**CST 115 e-Commerce Concepts 3 Sem Hrs**  
Provides an explanation of traditional commerce and e-commerce, which is doing business over the web. Describes an overview of the economic structures in which businesses operate and describe how electronic commerce fits into those structures. Includes a review of different Web-based tools, the software necessary, security concerns and strategies for Marketing, Sales and Promotion on the Web. (45-0)

**CST 120 PC Operating System Command Line Interface (DOS) 1 Sem Hr**  
Provides a basic introduction to Command Line Operating Systems Interface using the Disk Operating System (DOS) as an example. Includes basic commands and emphasizes commands for managing files and directories. Introduces basic features of managing and backing up a hard disk and surveys troubleshooting tools. Includes the creation and use of batch files. (15-0)

**CST 123 Windows Operating System 1 Sem Hr**  
Prerequisite: CST 103. Provides a continuing orientation to PC Operating Systems. Emphasizes the Windows Operating System features needed in the daily operation of microcomputers including customizing and managing the desktop, maintaining the system and backing up data. Includes the customizing of windows for increased productivity, creation of graphics and the concepts of Object Linking and Embedding. (15-0)

**CST 126 Unix/Linux Operating System 2 Sem Hrs**  
Provides a basic orientation to the Unix and Linux Operating Systems. Emphasizes how to create, display, copy and print files. Includes how to work with directories, and how to connect to the Internet. Credit may be earned in CST 126 or CIS 109, but not both (30-0)

**CST 128 PC Hardware Concepts and Troubleshooting 4 Sem Hrs**  
Prerequisite: Basic computer literacy. Uses hands-on experiences to examine the internal hardware components of IBM compatible computers with an emphasis on troubleshooting and repair. Discusses interaction of operating system and hardware in running application programs. Explores upgrading and optimizing computers to solve typical hardware and software problems. (60-0)

**CST 133 Computer Concepts & Competencies 4 Sem Hrs**  
Prepares the student for the on-going ethical, environmental, societal and global issues of technology. Presents computer concepts including input and output of data and how information is processed, stored, and shared. Examines the purpose of networks, their technologies, scopes, and connectivity issues. Gives major consideration to Internet technology and access emphasizing research, education, communication, e-commerce, and security. Provides an introduction to software engineering and the analysis and design of computer systems. Discusses computer platforms, architectures, and system software. Develops PC competencies and skills including file management, word processing, spreadsheets, presentation graphics, database, Internet, Web pages, and graphics. Credit may be earned in CST 133 or CIS 133, but not both. (60-0)

**CST 134 Micro Computers in Business Using MS Office 3 Sem Hrs**  
Surveys small computer systems used for personal, business, and industrial applications including hardware, software, and operating systems. Uses MS Office for word processing, spreadsheets, and database software as well as the evaluation and selection of systems. Credit may be earned in CST 134 or CIS 120, but not both. (45-0)

**CST 135 Help Desk Fundamentals 1 Sem Hr**  
Explores computer support processes and procedures that are used in business. Examines methods of communicating with users. Describes how service agreements are established with users. Defines problem solving procedures and methods to track and measure a problem until it is solved. (15-0)

**CST 146 Desktop Publishing 2 Sem Hrs**  
Prerequisite: OAT 170 or equivalent touch typing and computer background; and a thorough working knowledge of at least one word processing software package or equivalent. Provides an electronic tool to completely design a finished document. Emphasizes page design with text/graphics merging. Examines desktop publishing principles as well as pre-press operations. Analyzes similarities and differences between word processing and desktop publishing. Outside lab assignments are required. (30-0)

**CST 147 Presentation Graphics Using PowerPoint 2 Sem Hrs**  
Prerequisite: CST 103 or knowledge of the windows operating system. Develops beginning/intermediate skills in presentation and graphic layout for business and education presentations. Includes computer projection and creating of computer generated transparencies and handouts. Focuses on developing attractive, professional, effective, and well-timed visuals for different business settings using computer graphic presentation software. Credit may be earned in CST 147 or CIS 201 but not both. (30-0)

**CST 150 Information Security Policies, Procedures, and Fundamentals 3 Sem Hrs**  
Prerequisite: CST 170. Covers terminology; security systems development and implementation; and legal, ethical, and professional issues. Provides knowledge and experience to develop and maintain security policies and procedures. (30-15)

**CST 151 Spreadsheet Fundamentals 2 Sem Hrs**  
Prerequisite: CST 103 or Windows experience or permission of instructor. Surveys Microsoft Excel on the IBM PC including evaluation of spreadsheets, data base, graphics, report formatting and macros as applied to personal small business, and industrial settings. Credit may be earned in only one of the following: CST 151, CIS 132, CST 155, CIS 136. (30-0)

**CST 152 Implementing Network Security 3 Sem Hrs**  
Prerequisite: CST 150. Provides knowledge and the practical experience necessary to evaluate, implement, and manage secure information transferred over computer networks. Includes network security, intrusion detection, types of attacks, methods of attacks, security devices, basics of cryptography, and organizational security elements. (15-30)

**CST 153 Implementing Firewalls 3 Sem Hrs**  
Prerequisite: Instructor approval. Includes planning, designing, installing, and configuring Check Point firewalls that will allow key services while maintaining security. Includes protecting the internal IP services, configuring a firewall for remote access, and managing a firewall. (15-30)

**CST 154 Incident Response and Disaster Recovery 3 Sem Hrs**  
Prerequisites: CST 152 or CST 266. Includes implementing a plan to detect intruders, determine the damage caused, and discuss what precautions to use to avoid disasters and to recover from them when they do occur. (15-30)

**CST 155 Microsoft EXCEL 3 Sem Hrs**  
Presents EXCEL features using personal and business applications. Emphasizes features and techniques to develop solutions to spreadsheet problems. Includes evaluation of spreadsheets, data base, report formatting, and macros. Compares EXCEL with other electronic spreadsheets. Credit may be earned in only one of the following: CST 151, CIS 132, CST 155, or CIS 136. (45-0)

**CST 156 Implementing Wireless Security 3 Sem Hrs**  
Prerequisites: CST 153 or CST 154. Covers foundations of wireless security, wireless LAN vulnerabilities, passive wireless discovery, active wireless attacks, wireless security models, and enterprise wireless hardware security. Includes designing a secure wireless network, securing wireless authentication and transmission, managing the wireless network, writing wireless security policy, and managing operational support and wireless convergence. (15-30)

**CST 158 Network Intrusion Security Testing 3 Sem Hrs**  
Prerequisites: CST 153 and CST 154. Serves as a capstone for the Information Assurance track. Introduces security testing to protect networks and computers by using various tools to attempt entry into a network or computer. (15-30)

**CST 159 Introduction to Oracle Database Management 2 Sem Hrs**  
Explores relational database concepts and the architecture of a client-server database. Uses Oracle SQL commands to create and manage database tables and records. Introduces use of Oracle utilities. (30-0)

**CST 161 Networking Fundamentals 3 Sem Hrs**  
Prerequisites: CST 133W is recommended. Covers concepts, architectures, standards, protocols, designs and media of data communications and network technology. (30-15)

**CST 162 Introduction to Novell Network Administration 2 Sem Hrs**  
Prerequisite: CST 161. Introduces Novell NetWare. Covers installing NetWare, adding and deleting users, working with Novell Directory Services, setting up network printers, and maintaining security. (30-0)

**CST 163 Introduction to Windows Network Administration 2 Sem Hrs**  
Prerequisite: CST 161 Introduces Microsoft Windows Networking. Covers installing Microsoft Windows, adding and deleting users, working with Active Directory, setting up network printers, and maintaining security. (30-0)

**CST 164 LAN Switching and Wireless 3 Sem Hrs**  
Prerequisite: CST 161. Introduces concepts and terminology associated with Cisco networks and routers. Configures a basic Cisco internetwork. Manages and troubleshoots Cisco routers on an internetwork. (30-15)

**CST 165 Linux Networking I 3 Sem Hrs**  
Prerequisite: CST 126 and CST 161. Introduces Linux as a network operating system. Covers installing Linux, configuring a simple file server, and administering basic network administration tasks with command-line and graphical user interface tools. (45-0)

**CST 170 Principles of Computer Programming I 1 Sem Hr**  
Introduces fundamental concepts and techniques used to design computer programs. Includes problem definition, algorithm development, and program documentation. A programming language will be used to implement the design concepts. (15-0)

**CST 171 Visual BASIC Programming I 2 Sem Hrs**  
Prerequisite: CST 170 with a grade of "C" or better. Introduces Visual Basic as a first class for Micro Computer programmers. Uses BASIC commands in a Windows environment. Emphasizes implementation of objects and event driven code. Presents screen design and Microsoft Visual Basic controls. Includes structured programming principles including internal and external program documentation; sequence, selection, and iteration constructs; and modular programming. (30-0)

**CST 177 Principles of Computer Programming II 1 Sem Hr**  
Prerequisite : CST 170. Uses programmer tools to design, develop the logic, and document programs. VTOCs (Visual Table of Contents), flowcharts, state transition diagrams will be used. Emphasizes logic walk throughs and team development. Credit may be earned in CST 177 (formerly CST 270) or CIS 130, but not both. (15-0)

**CST 180 C++ Programming 4 Sem Hrs**  
Prerequisite: MATH LEVEL 5 and CST 177 or permission of instructor. Uses the C++ language to introduce software development principles. Develops solutions to computing problems through algorithm design, development, implementation, and testing. Includes control structures, arrays, files, strings, pointers, and fundamental object-oriented programming. Credit may be earned in only one of the following: CST 180, CST 181, CIS 170, CPS 170, or EGR 170. (60-0)

**CST 183 Java Programming 3 Sem Hrs**  
Prerequisites: CST 180 or instructor permission. Introduces the Java programming language with applications and applets. Emphasizes Java classes and object-oriented programming concepts. Includes control structures, string handling, arrays, graphics, files, and use of graphical user interface components. Introduces exception handling, multimedia, and multithreading. Credit may be earned in only one of the following: CST 183, CIS 180 or CPS 180. (45-0)

**CST 186 Introduction to Game Programming 2 Sem Hrs**  
Prerequisite: CST 170 with "C" or better. Introduces principles of game and simulation programming through hands-on creation of simple games. Explores text-based and graphics-based game development through algorithm design, development, implementation, testing, and documentation. Incorporates text, graphics, sound, and animations in game design. Includes Top-Down Design, Object Oriented Programming, simple physics, basic Artificial Intelligence, and game engines. (30-0)

**CST 204 Microsoft Word: Intermediate 2 Sem Hrs**  
Prerequisite: CST 104 or CST 134. Develops further the practical working knowledge of Microsoft Word software. Refines formatting and focuses on page layout and design. (30-0)

**CST 210 Advanced Web Page Development 2 Sem Hrs**  
Prerequisite: CST 110, CIS 160, CPS 160, CIS 161 or equivalent basic HTML web page knowledge. Focuses on concepts and tools for building web pages beyond basic HTML. Includes introductions to frames, forms, stylesheets, image maps, and managing differences in current web browsers. Introduces web page scripting and server interactions. Discusses Internet issues including ethics, etiquette, accessibility and security. (30-0)

**CST 214 JavaScript Programming 2 Sem Hrs**  
Prerequisite: CST 170 and CST 210, or equivalent HTML and programming experience. Introduces the JavaScript scripting language for web page enhancement. Includes JavaScript programming elements, forms and graphical user interface, managing windows, controlling links and location, and working with images, plug-ins, and documents. Credit may be earned in CST 214 or CST 114 but not in both. (30-0)

**CST 216 Web Site Management 3 Sem Hrs**  
Prerequisites: CST 110 or CIS 160 or CPS 160, and ART 171 or equivalent experience. Explores the design and management of web sites using a variety of software applications. Uses hands-on experiences to create advanced web pages including hyperlinks, lists, tables, frames, forms, graphics, and special effects. (45-0)

**CST 217 Web Server Programming 3 Sem Hrs**  
Prerequisite: CST 214 and CST 216; or equivalent web development experience. Introduces web server programming for processing user interactions with an Internet server. Focuses on processing web page form information, dynamically creating web pages, executing data-driven applications on a Web server, and performing various interactions with a Web user. (45-0)

**CST 219 Web Site Deployment 2 Sem Hrs**  
Prerequisite: CST 217. Provides capstone experience for development of a complete web site for realistic client needs. Includes determination of requirements and web system design from an actual or hypothetical client. Includes deployment of a web site with a well-defined home page, multiple content pages, required graphics, forms, and server database interaction. (0-30)

**CST 228 Advanced PC Troubleshooting (A+) 4 Sem Hrs**  
Prerequisite: Basic computer literacy and/or instructor permission. Covers common and advanced Microsoft Windows interface troubleshooting problems and techniques for solving them. Discusses function and structure of Microsoft Windows environment for managing files and directories; installing, configuring, customizing, and upgrading Windows environment and navigating through the operating system to access and retrieve information. Reviews Internet access concepts and setup. (60-0)

**CST 235 Systems Analysis and Design 3 Sem Hrs**  
Prerequisite: CST 133 or CIS 133, and CST 170 or CIS 130, 1 semester of accounting, and a programming language course. Includes study of data processing systems and procedures involving analysis of various existing data processing applications in business and industry. Includes a study of integrated or total management information and data processing systems. Emphasis is given to developing detailed procedures in various areas of management. Designed to study the three phases: Analysis of present information flow; system specification and equipment; implementation and documentation of the system. Credit may be earned in CST 235 or CIS 235, but not both. (45-0)

**CST 257 Database MS Access 3 Sem Hrs**  
Prerequisite: Any microcomputer class. Emphasizes the advantages of database processing, modeling, and design. Discusses design concepts from the standpoint of the user. Uses MicroSoft ACCESS. Credit may be earned in CST 257 or CIS 260, but not both. (45-0)

**CST 258 Introduction to Structured Query Language 1 Sem Hr**  
Prerequisite: CST 257. Examines SQL (Structured Query Language) which is the standard database language. Creates, updates, and retrieves information from relational databases. (15-0)

**CST 259 Advanced Oracle Database Management 3 Sem Hrs**  
Prerequisite: CST 159. Creates PL/SQL programs and named program units that are stored in the database and in the workstation file system. Creates integrated database applications with Oracle utilities. Develops project applications for databases with large data sets. Uses the object-oriented features in Form Builder to create reusable form objects. (45-0)

**CST 260 Routing Protocols and Concepts 3 Sem Hrs**  
Prerequisite: CST 161. Discusses the protocol suite of TCP/IP (Transmission Control Protocol/Internet Protocol). Defines and manages IP addresses. Configures a TCP/IP network. Investigates network management tools. (30-15)

**CST 262 Advanced Novell Networking 3 Sem Hrs**  
Prerequisite: CST 162 and CST 260. Configures various types of servers. Defines and configures the NetWare graphical user interface. Administers Net Ware Storage Services, NetWare Memory Management, and Novell Directory Services. (45-0)

**CST 263 Advanced Microsoft Networking 3 Sem Hrs**  
Prerequisites: CST 161, CST 163, and CST 260. Manages data storage, shared resources, and access rights. Manages and troubleshoots the network infrastructure, servers, client computers, and active directory objects. Manages software and security policies. (45-0)

**CST 264 Accessing the WAN 3 Sem Hrs**  
Prerequisite: CST 164, and CST 260. Introduces the physical and data-link layer configuration tasks. Configures various types of protocols. Manages advanced Cisco internetworks. (30-15)

**CST 265 Linux Networking II 3 Sem Hrs**  
Prerequisite: CST 165. Covers configuring different types of servers, administering advanced network administration tasks with command-line and graphical user interface tools, printing, and troubleshooting. (45-0)

**CST 266 Information Security 4 Sem Hrs**  
Prerequisites: CST 262 or 263 or 264 or 265; CST 260. Analyzes, designs, defines, and troubleshoots security policies and procedures to maintain information integrity, confidentiality and availability. (60-0)

**CST 267 Introduction to Computer Forensics 3 Sem Hrs**  
Prerequisite: CST 266. Provides a comprehensive understanding of computer forensics and electronic discovery along with associated investigation tools and techniques. Explores computer forensic theory and focuses various forensic skills used in the Information Security profession (45-0).

**CST 268 Special Topics in PC Support 2 Sem Hrs**  
Prerequisites: CST 128 & CST 228. Serves as the capstone course in the PC Support segment of the PC Systems Support & Technology program certificate and/or degree. Provides practical experience in PC Support through hands-on assessments drawing on learning gained in previous PC Systems Support courses. Focuses on PC hardware, software, network/security procedures, and communication skills including practice tests to help prepare for A+ certification/test. (15-15)

**CST 271 Visual Basic Programming II 3 Sem Hrs**  
Prerequisites: CST 171. Writes programs in a Windows environment using Visual Basic to design custom user interfaces with menus and dialogue boxes. Set up menus, create functions, and create executable files. Includes multiple forms, arrays, object linking and embedding, sequential and random data files, databases, and trapping programming errors. (45-0)

**CST 273 MS Applications Using Visual BASIC 2 Sem Hrs**  
Prerequisite: CST 171 or CIS 140. Emphasizes writing advanced applications in the windows environment using visual basic. Discusses linking to other windows applications, manipulating databases, and handling run-time errors. Includes creating user-friendly executable applications. Credit may be earned in CST 273 or CIS 241, but not both. (30-0)

**CST 280 Advanced C++ Programming 4 Sem Hrs**  
Prerequisite: One of the following: CST 180, CST 181, CIS 170, CPS 170, EGR 170 or CPS 171. Introduces data structures and object-oriented programming. Includes array processing, sorting and searching algorithms, and pointer variables, and recursive programming. Studies data storage and retrieval using lists, stacks, queues, and trees. Utilizes object oriented programming methods including classes, composition, and inheritance. Credit may be earned in CST 280, or CST 281 and CST 282 combined, but not in more than one. (60-0)

**CST 290-299 Special Projects in Computer Science and Information Technology**

**CST 392 Instructional Technology for Educators 3 Sem Hrs**  
Introduces software and internet applications technology for educators. Includes effective use of the Internet with e-mail, web usage and searching. Introduces tools for creation and modification of web pages. Includes various applications and techniques useful for teachers including presentation software, scanning and capturing graphics, spreadsheets, and classroom management tools. (45-0)

## Chemical Technology

**CT 100 Introduction To Chemical Technology 2 Sem Hrs**  
Provides overview of Chemical Process Industries and Chemical Technology with focus on the role of the process operator and the chemical technician. Introduces concepts of safety, regulation, laws affecting the job and the industry, and quality control. Includes study skills and attitudes necessary for study of science/technology as well as means of continuing professional and personal growth. Credit may be earned in CT 100 or CPI 110 but not both. (30-0)

**CT 290-299 Special Projects in Chemical Technology**

## Dental Assisting

**DA 106 Infection Control 1 Sem Hr**  
Prerequisites: BIO 140 or BIO 152 and BIO 153; any approved College Composition I; and any COM 112 or COM 114, with a "C" (2.0) or better in each. Concurrent enrollment in DA 110, DA 110 LW, and DA 114W. Introduces principles of the control of infectious diseases in the dental environment. Presents OSHA, MIOSHA, Hazard Control, and Delta College Infection Control Protocol. Introduces basic microbiology. (15-0)

**DA 110 Clinical Dental Assisting 3 Sem Hrs**  
Prerequisites: BIO 140 or BIO 152 and BIO 153; any approved College Composition I; and COM 112 or COM 114, with a "C" (2.0) or better in each. Concurrent enrollment in DA 106W, DA 110LW, and DA 114W. Provides the opportunity to explore the skills and knowledge for general chairside clinical procedures. (45-0)

**DA 110L Clinical Dental Assisting I Lab 4 Sem Hrs**  
Prerequisites: BIO 140 or BIO 152 and BIO 153; any approved College Composition I; and COM 112 or COM 114, with a "C" (2.0) or better in each. Corequisites: DA 106W, DA 110, and DA 114W. Provides the opportunity for application of clinical techniques. Implements OSHA's practical skills. (0-120)

**DA 113 Oral Anatomy & Physiology 4 Sem Hrs**  
Prerequisites: BIO 140 or BIO 152 and BIO 153; any approved College Composition I; and COM 112 or COM 114, with a "C" (2.0) or better in each. Concurrent enrollment in DA 117W. Introduces basic structures and physiology of the oral cavity, head, and neck. Includes oral histology, embryology, and pathology related to the development of the dental structure. (60-0)

**DA 114 Dental Materials I 2 Sem Hrs**  
Prerequisites: BIO 140 or BIO 152 and BIO 153; any approved College Composition I, and COM 112 or COM 114, with a "C" (2.0) or better in each. Concurrent enrollment in DA 106W, DA 110, and DA 110LW. Presents theory, properties, manipulation, and hazard management of dental material to include cements, liners, amalgam, and resins. (30-0)

**DA 117 Dental Health and Nutrition 1 Sem Hr**  
Prerequisites: BIO 140 or BIO 152 and BIO 153; any approved College Composition I; and COM 112 or COM 114, with a "C" (2.0) or better in each. Concurrent enrollment in 113W. Emphasizes oral hygiene, general and applied nutrition, as well as patient motivation techniques. Dental health projects required. (15-0)

**DA 120 Clinical Dental Assisting II 3 Sem Hrs**  
Prerequisites: DA 106W, DA 110, DA 110LW, DA 113W, DA 114W, DA 117W, and HSC 140 with a "C" (2.0) minimum grade in each. Concurrent enrollment in DA 120LW, DA 121W, DA 125W, and DA 125LW. Provides the knowledge for additional application of dental techniques to include dental specialties. (45-0)

**DA 120L Clinical Dental Assisting II Lab 4 Sem Hrs**  
Prerequisites: DA 106W, DA 110, DA 110LW, DA 113W, DA 114W, DA 117W, and HSC 140 with a "C" (2.0) minimum grade in each. Concurrent enrollment in DA 120, DA 121W, DA 125W, and DA 125LW. Provides opportunity for additional application of dental techniques to include dental specialties. (0-120)

**DA 121 Clinical Practice 4 Sem Hrs**  
Prerequisites: DA 106W, DA 110, DA 110LW, DA 113W, DA 114W, DA 117W, and HSC 140 with a "C" (2.0) minimum grade in each. Concurrent enrollment in DA 120, DA 120LW, DA 125W, and DA 125LW. Provides the opportunity to apply practical skills in a clinical setting. Requires assignments in off-campus facilities and dental hygiene clinics. (0-60)

**DA 123L Dental Radiology Lab 2 Sem Hrs**  
Prerequisites: DA 113W, DA 117W, and HSC 140 with a "C" (2.0) minimum grade in each. Concurrent enrollment in DA 123W. Provides laboratory practice in the application of commonly used dental radiographic procedures utilizing mannequins and clinic patients. (0-60)

**DA 123 Dental Radiology 2 Sem Hrs**  
Prerequisites: DA 113W, DA 117W, and HSC 140 with a "C" (2.0) minimum grade in each. Concurrent enrollment in DA 123LW. Introduces the principles of radiation physics, factors affecting radiographic images, biological effects of radiation, and the protective measures necessary in dental radiation (30-0)

**DA 125L Dental Materials II Lab 2 Sem Hrs**  
Prerequisites: DA 106W, DA 110, DA 110LW, DA 113W, DA 114W, DA 117W, and HSC 140 with a "C" (2.0) minimum grade in each. Concurrent enrollment in DA 120, DA 120LW, DA 121W, and DA 125W. Introduces the manipulation of indirect and adjunct restorative procedures. (0-60)

**DA 125 Dental Materials II 2 Sem Hrs**  
Prerequisites: DA 106W, DA 110, DA 110LW, DA 113W, DA 114W, DA 117W, and HSC 140 with a "C" (2.0) minimum grade in each. Concurrent enrollment in DA 120, DA 120LW, DA 121W, and DA 125LW. Introduces the theory of indirect and adjunct restorative procedures. (30-0)

**DA 129 Dental Office Management 3 Sem Hrs**  
Prerequisite: DA 123 and DA 123L with a "C" (2.0) minimum grade. Emphasizes fundamental office skills in managing patient and business records, handling the telephone and visitors, controlling the appointment book, and processing dental claim forms. Includes basic financial procedures and computer use. (45-0)

**DA 130 Dental Assisting Internship 6 Sem Hrs**  
Prerequisite: DA 120 and DA 120LW with a minimum "C" (2.0) grade in each. Concurrent enrollment in DA 133. Provides the opportunity to perform chairside assisting techniques, laboratory procedures, and dental office management skills while under direct supervision. Assignments will be made to dental care facilities. (0-260)

**DA 131L RDA Exam Prep Lab 4 Sem Hrs**  
Prerequisites: DA 120, DA 120LW, DA 121W, DA 123W, DA 123LW, DA 125W and DA 125LW with a "C" (2.0) minimum grade. Concurrent enrollment in DA 131W. Provides continual dental procedure knowledge and skill development needed to perform expanded functions as permitted by State of Michigan mock clinical exam. (0-80)

**DA 131 RDA Exam Prep 1 Sem Hr**  
Prerequisites: DA 120, DA 120LW, DA 121W, DA 123W, DA 123LW, DA 125W, and DA 125LW with a "C" (2.0) minimum grade in each. Concurrent enrollment in DA 131LW. Provides continual dental procedure knowledge and skill development needed to perform expanded functions as permitted by State of Michigan RDA mock written exam. (15-0)

**DA 133 Dental Assisting Internship Seminar 1 Sem Hr**  
Prerequisite: DA 120 and DA 120LW with a minimum "C" (2.0) grade in each. Concurrent enrollment in DA 130. Provides opportunities to share internship experiences and future educational goals. Develops resume writing and job seeking skills. (15-0)

**DA 290-299 Special Projects in Dental Assisting**

## Dental Hygiene

<b>DH 100</b>	<b>Dental Hygiene Profession</b>	<b>1 Sem Hr</b>
Provides overview of the Dental Hygiene Profession including the history and organizational structure of the American Dental Hygiene Association, and the ethical/legal aspects of the profession. Required dental office observation required. (15-0)		
<b>DH 101</b>	<b>Dental Anatomy I</b>	<b>2 Sem Hrs</b>
Examines terminology of dental anatomy, morphology of the human dentitions and occlusion. (30-0)		
<b>DH 110</b>	<b>Dental Infection Control</b>	<b>2 Sem Hrs</b>
Prerequisite: Current validation for Dental Hygiene Program. Presents theory and application of procedures and skills necessary to control transmissible diseases. Provides opportunities to practice Universal Precautions for the patient, professional, environment, and facilities. (15-30)		
<b>DH 111</b>	<b>Oral Examinations</b>	<b>1 Sem Hr</b>
Prerequisite: DH 100 and 101 each with a C (2.0) minimum grade and admission to the Dental Hygiene Program. Provides opportunity to practice skills necessary to perform dental charting and oral cancer examinations. Examines the various parts of dental appliances. (0-30)		
<b>DH 112</b>	<b>Medical Assessment/Emergencies</b>	<b>2 Sem Hrs</b>
Prerequisites: DH 100 and 101 each with a C (2.0) minimum grade, current HCP CPR certification and admission to the Dental Hygiene Program. Provides the opportunity to practice assessment, identification, and dental hygiene treatment protocol of septicemic emergencies which may occur in treating the dental patient. (15-30)		
<b>DH 114</b>	<b>Oral Health</b>	<b>2 Sem Hrs</b>
Prerequisites: DH 100 and 101, each with a C (2.0) minimum grade and admission to the Dental Hygiene Program. Presents theory of the characteristics, origin, and development of fluoride, dentifrices, mouthwashes, and deposits that affect the tooth surface. Emphasizes toothbrushing, auxiliary aids, dental appliances, care of pre/post surgical and oral cancer patients. (15-45)		
<b>DH 115</b>	<b>Clinical Techniques</b>	<b>5 Sem Hrs</b>
Prerequisites: DH 100 and 101 each with a C (2.0) minimum grade and admission to the Dental Hygiene Program. Presents theory and application of various periodontal instruments, plaque and stain removal and instrument sharpening skills that are necessary for proper use in the dental hygiene diagnostic and therapeutic services. Emphasizes proper documentation of findings. (45-90)		
<b>DH 116</b>	<b>Preventive Nutrition</b>	<b>3 Sem Hrs</b>
Prerequisites: DH 100 and 101, each with a C (2.0) minimum, grade and admission to the Dental Hygiene Program. Provides theory of foods, essential nutrients and their effects on general health as well as oral health. Emphasizes nutrition in dentistry for the dental hygienist in prevention and health promotion. (45-0)		
<b>DH 118</b>	<b>Head and Neck Anatomy</b>	<b>3 Sem Hrs</b>
Prerequisites: DH 100 and 101, each with a C (2.0) minimum grade and admission to the Dental Hygiene Program. Presents anatomy of the human head and neck and surrounding structures. Emphasizes basic anatomical terminology, landmarks, and a complete description of the skeletal, muscular, lymphatic, vascular, and innervation systems. (30-45)		
<b>DH 120</b>	<b>Periodontics I</b>	<b>3 Sem Hrs</b>
Prerequisites: DH 110, 111, 112, 114, 115, 116, and 118 each with a C (2.0) minimum grade. Provides the opportunity to study the biology of the periodontium, etiology, epidemiology, pathology, and treatment of periodontal diseases. (45-0)		
<b>DH 121</b>	<b>Dental Hygiene Seminar I</b>	<b>2 Sem Hrs</b>
Prerequisites: DH 110, DH 111, DH 112, DH 114, DH 115, DH 116, and DH 118 each with a C (2.0) minimum grade. Introduces fundamentals of treatment planning, recall systems, documentation, patient management, and communication with diverse patient populations. (30-0)		

<b>DH 122</b>	<b>Oral Histology and Embryology</b>	<b>3 Sem Hrs</b>
Prerequisites: DH 110, 111, 112, 114, 115, 116, and 118 each with a C (2.0) minimum grade. Provides theory of the embryological development of the oral cavity and identification and classifications of normal and abnormal conditions of the oral cavity and supporting structures. Includes microscopic study of the histology of the human dentition and the surrounding supporting structures. (45-0)		
<b>DH 123</b>	<b>Dental Radiography</b>	<b>2 Sem Hrs</b>
Prerequisites: DH 110, 111, 112, 114, 115, 116, and 118 each with a C (2.0) minimum grade. Presents theory of characteristics of radiation, components and functions of x-ray equipment, x-ray production, radiation biology and safety as well as processing and technical errors. (30-0)		
<b>DH 123L</b>	<b>Dental Radiography Lab</b>	<b>1 Sem Hr</b>
Prerequisites: DH 110, 111, 112, 114, 115, 116, and 118 each with a C (2.0) minimum grade. Introduces the techniques of exposing, processing, and mounting dental radiographs, as well as radiographic interpretation. (0-45)		
<b>DH 124</b>	<b>Pharmacology for Dental Hygiene</b>	<b>2 Sem Hrs</b>
Prerequisites: DH 110, DH 111, DH 112, DH 114, DH 115, DH 116, and DH 118 each with a C (2.0) minimum grade. Concurrent enrollment in DH 120, DH 121, DH 122, DH 123, DH 123L, DH 125, and LW 206A. Provides introduction to drugs and anesthetic agents commonly used in the dental practice. Includes origin, physical and chemical properties, methods of administration, and biological effects on the various body systems. (30-0)		
<b>DH 125</b>	<b>Clinical Dental Hygiene I</b>	<b>4 Sem Hrs</b>
Prerequisites: DH 110, DH 111, DH 112, DH 114, DH 115, DH 116, and DH 118 (each with a minimum "C" grade). Concurrent enrollment in DH 120, DH 121, DH 122, DH 123, DH 123L, DH 124, and LW 206A. Provides the opportunity to implement basic treatment skills with clinic patients. (15-120)		
<b>DH 130</b>	<b>Management of Dental Pain and Anxiety in the Dental Office</b>	<b>3 Sem Hrs</b>
Prerequisites: DH 120, DH 121, DH 122, DH 123, DH 123L, DH 125, and LW 206A with a minimum "C" (2.0) grade in each. Concurrent enrollment in DH 131, DH 135, LW 206B, and continued enrollment in DH 124. Provides the knowledge and practice to administer local anesthesia and nitrous oxide/oxygen sedation in a safe and effective manner. Provides the opportunity to perform various local anesthetic injection techniques and administer nitrous oxide and oxygen to achieve conscious sedation at a clinical level of competency. (30-30)		
<b>DH 131</b>	<b>Dental Hygiene Seminar II</b>	<b>1 Sem Hr</b>
Prerequisites: DH 120, DH 121, DH 122, DH 123, DH 123L, DH 125, and LW 206A each with a C (2.0) minimum grade. Concurrent enrollment in DH 130, DH 135, LW 206B, and continued enrollment in DH 124. Emphasizes the study of techniques and philosophies of treating patients with special needs. (15-0)		
<b>DH 135</b>	<b>Clinical Dental Hygiene II</b>	<b>3 Sem Hrs</b>
Prerequisites: DH 120, DH 121, DH 122, DH 123, DH 123L, DH 125, and LW 206A, each with a "C" (2.0) minimum grade. Concurrent enrollment in DH 130, DH 131, LW 206B, and continued enrollment in DH 124. Provides the opportunity to practice and increase the students' proficiency skill levels from previous Dental Hygiene courses. (7.5-90)		
<b>DH 210</b>	<b>Periodontics II</b>	<b>2 Sem Hrs</b>
Prerequisites: DH 130, DH 131, DH 135, and LW 206B, each with a "C" (2.0) minimum grade. Concurrent enrollment in DH 213, DH 214W, DH 215, DH 216W, and DH 219. Provides the opportunity for assessment, documentation, and treatment with pain management of the periodontal patient and to demonstrate ultrasonic scaling, root debridement, planing, and irrigation. (15-45)		

**DH 213 Oral Pathology 3 Sem Hrs**

Prerequisites: DH 130, DH 131, DH 135 and LW 206B each with a "C" (2.0) minimum grade. Concurrent enrollment in DH 210, DH 214, DH 215, DH 216 and DH 219. Introduces the process, identification, and classification of oral diseases. Emphasizes the prevention of the diseases with the scope of responsibility and practice of the dental hygienist. (45-0)

**DH 214 Dental Materials 4 Sem Hrs**

Prerequisites: DH 130, DH 131, DH 135 and LWA 206B each with a "C" (2.0) minimum grade. Concurrent enrollment in DH 210, DH 213, DH 215, DH 216 and DH 219. Presents theory and clinical application related to properties and manipulation of dental materials and devices used in dental procedures. (45-5)

**DH 215 Clinical Dental Hygiene III 6 Sem Hrs**

Prerequisites: DH 130, DH 131, DH 135, and LWA 206B, each with a "C" (2.0) minimum grade. Concurrent enrollment in DH 210, DH 213, DH 214, DH 216, and DH 219. Provides the opportunity to practice and increase the students' proficiency skill levels of advanced instruments from previous Dental Hygiene courses. (15-180)

**DH 216 Community Dentistry I 2 Sem Hrs**

Prerequisites: DH 130, DH 131, DH 135 and LWA 206B each with a "C" (2.0) minimum grade. Concurrent enrollment in DH 210, DH 213, DH 214, DH 215, and DH 219. Provides theoretical base for assessing, designing, implementing, and evaluating dental health improvement programs. (30-0)

**DH 219 Case Study Documentation I .5 Sem Hr**

Prerequisites: DH 130, DH 131, DH 135, LWA 206B each with a "C" (2.0) minimum grade. Corequisites: DH 210, DH 213, DH 214, DH 215, DH 216. Provides an opportunity to identify the steps and begin using the process of case documentation for dental patients' conditions and treatment. (7.5-0)

**DH 222 Case Study Documentation II 1.5 Sem Hrs**

Prerequisites: DH 210, DH 213, DH 214, DH 215, DH 216, and DH 219 each with a "C" (2.0) minimum grade. Corequisites: DH 225, DH 227, DH 228, DH 229, and LWA 206C. Provides further opportunity to present specific case documentation on dental patients' conditions/treatments. (22.5-0)

**DH 225 Clinical Dental Hygiene IV 6 Sem Hrs**

Prerequisites: DH 210, DH 213, DH 214, DH 215, DH 216, and DH 219 each with a "C" (2.0) minimum grade. Concurrent enrollment in DH 222, DH 227, DH 228, DH 229, and LWA 206C. Provides the opportunity to perfect dental hygiene skills learned in all previous dental hygiene courses and learn advanced instrumentation skills as well as application of pit and fissure sealants. (15-180)

**DH 227 Community Dentistry II 1 Sem Hr**

Prerequisites: DH 210, DH 213, DH 214, DH 215, DH 216 and DH 219, each with a "C" (2.0) minimum grade. Concurrent Enrollment in DH 222, DH 225, DH 228, DH 229 and LWA 206C. Provides opportunity for assessment of dental health needs for target populations. Includes design, implementation, and evaluation of dental health improvement programs in non-traditional settings. Evening, weekend, and holiday assignments may be required. (0-45)

**DH 228 Dental Hygiene Seminar III 1 Sem Hr**

Prerequisites: DH 210, DH 213, DH 214, DH 215, DH 216 and DH 219 each with a "C" (2.0) minimum grade. Concurrent Enrollment in DH 222, DH 225, DH 227, DH 228 and LWA 206C. Provides theory and techniques of treating patients with chemical dependencies and special needs. Includes the coordination of treatment phases of the AIDS patient. (15-0)

**DH 229 Seminar on Practical Exam 2 Sem Hrs**

Prerequisites: DH 210, DH 213, DH 214, DH 215, DH 216, and DH 219 with a minimum grade of "C" (2.0). Concurrent enrollment in DH 222, DH 225, DH 227, DH 228, and LWA 206C. Provides strategies and opportunities to practice skills to enhance success in licensure exams, position searches, and private practice. (15-30)

**DH 290-299 Special Projects in Dental Hygiene****Diagnostic Medical Sonography****DMS 100 Patient Care and Management 2 Sem Hrs**

Prerequisite: Must be accepted into the DMS program or have consent of instructor. Concurrent enrollment in DMS 105. Develops knowledge and skills in basic concepts of patient care. Includes emergency care procedures, infection control, patient safety and transfers, communication, and patient education. (30-0)

**DMS 101 Introduction to Sonography 2 Sem Hrs**

Prerequisite: DMS 100 and DMS 105W with a "B" (3.0) grade or better. Concurrent enrollment in DMS 103, DMS 104, DMS 106, and LW 206A, with continued enrollment in DMS 105. Introduces various aspects of sonography and health care including terminology, legal and ethical issues, patient care, film presentation, imaging modalities, and human reproduction and embryology. (30-0)

**DMS 103 Introduction to Abdominal Sonography 3 Sem Hrs**

Prerequisite: DMS 100 and DMS 105W with a "B" (3.0) grade or better. Concurrent enrollment in DMS 101, DMS 104, DMS 106, and LW 206A, with continued enrollment in DMS 105. Studies basic anatomy and physiology relating to abdominal sonography. Teaches proper scanning techniques and protocols for identifying normal and abnormal sonographic patterns. Discusses clinical signs and symptoms, along with interpretation of clinical lab tests. (45-0)

**DMS 104 Introduction to OB/GYN Sonography 2 Sem Hrs**

Prerequisite: DMS 100 and DMS 105W with a "B" (3.0) grade or better. Concurrent enrollment in DMS 101 DMS 103, DMS 105, DMS 106, and LW 206A. Discusses various aspects of OB/GYN sonography. Studies normal sectional anatomy and development, fetal assessment, normal and abnormal sonographic patterns, along with techniques and protocols. (30-0)

**DMS 105 Ultrasound Physics and Instrumentation I 2 Sem Hrs**

Prerequisite: Must be accepted into the DMS program or have consent of instructor. Concurrent enrollment in DMS 100. Introduces the basic acoustic physics including a history of instrumentation, ultrasonic propagation principles, transducer parameters, and basic equipment types. (30-0)

**DMS 106 Ultrasound Scanning 4 Sem Hrs**

Prerequisite: DMS 100, and DMS 107 with a "B" (3.0) grade or better. Concurrent enrollment in DMS 101, DMS 103, DMS 104, and LW 206A, with continued enrollment in DMS 105. Provides hands on experience in sonographic imaging. Teaches basic operations of the ultrasound machine along with transducer orientation. Includes an overview of abdominal and pelvis imaging, scan plane recognition, and basic imaging concepts. (75-0)

**DMS 107 Introduction to Ultrasound Scanning 1 Sem Hr**

Must be accepted into the DMS program. Concurrent enrollment in DMS 100 and DMS 105W. Provides an introduction to sonographic imaging. Teaches basic operations of the ultrasound machine along with transducer orientation and imaging scan planes. (15-0)

**DMS 107L Introduction to Ultrasound Scanning Lab 1 Sem Hr**

Must be accepted into the DMS program. Concurrent enrollment in DMS 100 and DMS 105W. Provides an introduction to sonographic imaging. Teaches basic operations of the ultrasound machine along with transducer orientation and imaging scan planes. (0-15)

**DMS 112 Small Parts Sonography 1 Sem Hr**

Prerequisites: DMS 101, DMS 103, DMS 104, and DMS 106 with a "B" (3.0) grade or better and LW 206A with a "C" (2.0) minimum grade. Concurrent enrollment in DMS 113, DMS 114, DMS 115, DMS 116, DMS 117, and LW 206B. Covers the fundamentals of superficial parts sonography. Presents basic small parts anatomy, as well as proper scanning techniques and protocols for identifying normal and abnormal sonographic patterns. (15-0)

**DMS 113      Advanced Abdominal Sonography      1 Sem Hr**  
Prerequisites: DMS 101, DMS 103, DMS 104, and DMS 106 with a "B" (3.0) or better and LW 206A with a "C" (2.0) minimum grade. Concurrent enrollment in DMS 112, DMS 114, DMS 115, DMS 116, DMS 117, and LW 206B. Presents pathology and disease processes, normal and abnormal sonographic patterns, clinical correlation, and differential diagnosis of the abdominal cavity. (15-0)

**DMS 114      Advanced OB/GYN Sonography      2 Sem Hrs**  
Prerequisites: DMS 101, DMS 103, DMS 104, and DMS 106, all with a "B" (3.0) minimum grade, and LW 206A with a "C" (2.0) minimum grade. Concurrent enrollment in DMS 112, DMS 113, DMS 115, DMS 116, DMS 117, and LW 206B. Presents pathology and disease processes, normal and abnormal sonographic patterns, clinical correlation, and differential diagnosis of the obstetrical and gynecologic patient. (30-0)

**DMS 115      Ultrasound Physics and Instrumentation II      2 Sem Hrs**  
Prerequisites: DMS 101, DMS 103, DMS 104, and DMS 106, all with a "B" (3.0) minimum grade and LW 206A with a "C" (2.0) minimum grade. Concurrent enrollment in DMS 112, DMS 113, DMS 114, DMS 116, DMS 117, and LW 206B. Presents the fundamentals of doppler ultrasound, scanning artifacts, quality assurance, and biologic effects, and safety. Includes an overview of the components of an ultrasound system. (30-0)

**DMS 116      Clinical Seminar I      .5 Sem Hr**  
Prerequisites: DMS 101, DMS 103, DMS 104, and DMS 106 all with a "B" (3.0) minimum grade, and LW 206A with a "C" (2.0) minimum grade. Concurrent enrollment in DMS 112, DMS 113, DMS 114, DMS 115, DMS 117, and LW 206B. Provides a clinical overview of sonographic procedures of the abdomen, pelvis, fetus, and small parts. Emphasizes identification of normal anatomy and basic pathology. (7.5-0)

**DMS 117      Clinical Education I      5 Sem Hrs**  
Prerequisites: DMS 101, DMS 103, DMS 104, and DMS 106 all with a "B" (3.0) minimum grade, and LW 206A with a "C" (2.0) minimum grade. Concurrent enrollment in DMS 112, DMS 113, DMS 114, DMS 115, DMS 116, and LW 206B. Provides structured clinical experience necessary to perform sonographic procedures of the abdomen, pelvis, fetus, and small parts. (0-440)

**DMS 201      Introduction to Neurologic and Vascular Sonography      3 Sem Hrs**  
Prerequisites: DMS 112, DMS 113, DMS 114, DMS 115, DMS 116, and DMS 117 all with a "B" (3.0) minimum grade, and LW 206B with a "C" (2.0) minimum grade. Concurrent enrollment in DMS 202, DMS 206, DMS 207, and LW 206C. Provides an overview of sonographic imaging of the neonatal and infant brain. Includes normal and abnormal anatomy and sonographic patterns. Looks at basic vascular ultrasound with emphasis on normal anatomy, imaging techniques, and basic pathology. (45-0)

**DMS 202      Ultrasound Seminar I      4 Sem Hrs**  
Prerequisites: DMS 112, DMS 113, DMS 114, DMS 115, DMS 116, and DMS 117 all with a "B" (3.0) minimum grade, and LW 206B with a "C" (2.0) minimum grade. Concurrent enrollment in DMS 201, DMS 206, DMS 207, and LW 206C. Presents basic techniques and protocols for invasive and intraoperative sonography. Looks at advanced sonographic imaging procedures, new advances in the field of sonography, and the fundamental elements for maintaining an ultrasound department. (60-0)

**DMS 206      Clinical Seminar II      .5 Sem Hr**  
Prerequisites: DMS 112, DMS 113, DMS 114, DMS 115, DMS 116, and DMS 117 all with a "B" (3.0) minimum grade, and LW 206B with a "C" (2.0) minimum grade. Concurrent enrollment in DMS 201, DMS 202, and DMS 207. Provides a clinical overview of sonographic procedures of the abdomen, pelvis, fetus, and superficial parts. Emphasizes identification of pathology, recognition of disease processes, sonographic differentials, and clinical correlation. (7.5-0)

**DMS 207      Clinical Education II      5 Sem Hrs**  
Prerequisites: DMS 112, DMS 113, DMS 114, DMS 115, DMS 116, and DMS 117 each with a "B" (3.0) minimum grade, and LW 206B with a "C" (2.0) minimum grade. Concurrent enrollment in DMS 201, DMS 202, DMS 206, and LW 206C. Provides structured clinical experience necessary to perform sonographic procedures of the abdomen, pelvis, fetus, small parts, and vascular system. (0-440)

**DMS 212      Ultrasound Seminar II      4 Sem Hrs**  
Prerequisites: DMS 201, DMS 202, DMS 206, and DMS 207 each with a "B" (3.0) minimum grade, and LW 206C with a "C" (2.0) minimum grade. Concurrent enrollment in DMS 217. Discusses all aspects of sonographic imaging including scanning techniques and protocols, normal and abnormal sonographic patterns, pathologic and disease processes, and differential diagnosis. Includes preparation for the ARDMS certifying examinations. (60-0)

**DMS 217      Clinical Education III      5 Sem Hrs**  
Prerequisites: DMS 201, DMS 202, DMS 206, and DMS 207 each with a "B" (3.0) minimum grade, and LW 206C with a "C" (2.0) minimum grade. Concurrent enrollment in DMS 212. Provides structured clinical experience necessary to perform sonographic procedures of the abdomen, pelvis, fetus, small parts, and vascular system. (0-440)

**DMS 290-299      Special Projects in Diagnostic Medical Sonography**

## Drafting

**DRF 104      Basic Mechanical Design      4 Sem Hrs**  
Developed for students with no drafting experience, less than one year of high school mechanical drafting, or for students with less than a C (2.0) grade in mechanical drafting. Provides instruction and practice to develop skill in spatial visualization, sketching, multiview instrument drawing, section views, design concept presentation, pictorial drawing, and American National Standards Institute (ANSI) conventional drafting and dimensioning standards. Credit may be earned in DRF 104 or DRF 105 but not in both. (15-105)

**DRF 105      Beginning Mechanical Design      3 Sem Hrs**  
Provides instruction and practice to develop skill in spatial visualization, sketching, multiview instrument drawing, section views, design concept presentation, pictorial drawing, and American National Standards Institute (ANSI) conventional drafting and dimensioning standards. Credit may be earned in DRF 104 or DRF 105 but not both. (15-75)

**DRF 107      Intermediate mechanical Design      3 Sem Hrs**  
Prerequisite: DRF 104 or 105, and CAD 114. Applies computer-aided and manual methods to the mechanical design process using single and multi-view dimensioning, tolerancing, limit dimensions, thread representation and symbols, orthographic projection, auxiliary views, revolution views, design specifications, working drawings, and vectors for analysis. (30-30)

**DRF 120      Beginning Industrial Blueprint Reading      2 Sem Hrs**  
Includes manipulation of basic fractions and decimals as applied to the reading of blueprints, reading measuring instruments, basic geometric figures, drafting and blueprinting procedures, basic orthographic projection auxiliary and sectional views, detail and assembly drawings, dimensioning and tolerances, title block, change block, list of materials, and notes. Credit may be earned in DRF 120 or WELD 120 but not both. (30-0)

**DRF 121      Blueprint Reading      3 Sem Hrs**  
Introduces blueprint symbols and their meaning as used in a manufacturing operation. Describes basic geometric figures, drafting and blueprint procedures, orthographic projection, including auxiliary and sectional views, detail and assembly drawings, dimensioning and tolerances, title blocks, material lists, and notes for use by various manufacturing personnel. (45-0)

**DRF 122      Blueprint Reading for Welders and Fabricators      2 Sem Hrs**

Prerequisite: DRF 120 or DRF 121 or SKDR 101 or WELD 120 or basic knowledge of blueprint reading. Applies principles specifically designed for welders and fabricators working with welding drawings. Interprets basic blueprint information, orthographic projection, assembly drawings, and geometric tolerancing. Places emphasis on welding symbols and welding drawings. Credit may be earned in DRF 122 or WELD 122 but not both. (30-0)

**DRF 124      Blueprint Reading for Machine Tool Operators      2 Sem Hrs**

Prerequisite: DRF 120. Instructs machinists, lathe operators, mill operators, and grinder operators in more in-depth treatment of working drawings, supplementary views and information, materials and processes commonly found in machining drawings. (30-0)

**DRF 128      Geometric Tolerancing      2 Sem Hrs**

Prerequisite: DRF 121 or permission of instructor. Emphasizes geometric symbols used in place of written notes on industrial drawings including datum, symbols, and other items tolerancing to the geometry of the part. Credit may be earned in either DRF 128 or SKDR 128 but not both. (30-0)

**DRF 129      Advanced Geometric Tolerancing      2 Sem Hrs**

Prerequisite: DRF 128. A continuation of DRF 128, with a more in-depth study of positional tolerance, datums, form tolerance, gaging and verifying principles with advanced applications. (30-0)

**DRF 256      Descriptive Geometry      3 Sem Hrs**

Prerequisites: MTH 103 or MT 110, and DRF 107. Emphasizes space visualization and processes of solution. Problems comprise: combinations of points, lines, planes, intersections, developments, warped surfaces, true angles, true size and shape, vectors, shades and shadow, and conics. (15-75)

**DRF 257      Advanced Mechanical Design      4 Sem Hrs**

Prerequisites: DRF 107, DRF 128, MS 113, or permission of instructor. Focuses on individual and/or team assignments working from complex design layouts to presentation of complete sets of working drawings, including product design, piping design, welding design, and plant layout. Emphasizes the CAD/CAE system, the design process, engineering references, and use of supplier catalogs. (30-90)

**DRF 290-299      Special Projects in Drafting**

## Economics

**ECN 221      Principles of Macroeconomics      4 Sem Hrs**

Prerequisites: READING LEVEL 3 or WRITING LEVEL 3, MATH LEVEL 4. Studies the impact of consumer, business and government decisions on the macro economy. Includes: supply and demand analysis, measures of macroeconomic performance, money and banking, and various schools of macroeconomic thought and their policy implications. (60-0)

**ECN 222      Principles of Microeconomics      4 Sem Hrs**

Prerequisite: ECN 221. Studies the behavior of individual decision making units of the economy. Includes foundations of supply and demand, business behavior based on market structure, regulated business, international trade and finance, and selected current topics. (60-0)

**ECN 268      International Studies in Economics      1-4 Sem Hrs**

An analysis of foreign economic systems, including the private-public mix, role of international trade, foreign solutions to common economic problems, and specific timely topics. Includes classroom lectures, individual consultation and international field of study. Expenses for field study must be borne by the student. By prior arrangement with appropriate faculty, students may also take International Studies in the following disciplines: GEO 268, MGT 268 (or former GB 268), SOC 268. (60-0)

**ECN 290-299      Special Projects in Economics**

## Education

**ED 200A      Exploratory Teaching (Elementary)      3 Sem Hrs**

Prerequisites: Any approved College Composition I and College Composition II course with minimum of C (2.0); minimum of 24 credits with 2.5 gpa; minimum 2 courses from the following with at least a C+ in each: ART 105, ART 113, ED 101, LIT 251, MTH 110, MTH 115, MTH 116, MUS 100, LWT 266, PSY 223. Provides aspiring elementary teachers with experience, study and discussion to enable them to make informed career decisions. Requires at least 90 hours of field work in an elementary school, plus at least 15 hours of seminar. Credit may be earned in ED 200A or ED 200B but not in both. (15-90)

**ED 200B      Exploratory Teaching (Secondary)      3 Sem Hrs**

Prerequisite: Any Approved College Composition I and College Composition II with minimum of C (2.0); minimum of 24 credits with 2.5 gpa; minimum 2 courses in teaching major or minor with at least C+ in each. Provides aspiring secondary teachers with experience, study and discussion to enable them to make informed career decisions. Requires at least 90 hours of field work in a secondary school, plus at least 15 hours of seminar. Credit may be earned in ED 200A or ED 200B but not in both. (15-90)

**ED 201      Education of the Exceptional Child      3 Sem Hrs**

Emphasizes the characteristics of exceptional children, including an overview of their educational needs and the approaches of various programs. (45-0)

**ED 268      International Studies in Education      1-4 Sem Hrs**

Involves the study of one or more aspects of the educational system of a country other than the United States including class lectures and individual consultation. Overseas study is an integral part of the course. Expenses for travel and overseas study must be borne by the student. (60-0)

**ED 290-299      Special Projects in Education      Sem Hr**

**ED 368      Educating for Global Participation      2 Sem Hrs**

Prerequisite: Open to all full and part-time faculty and staff and by permission of instructor. Assists educators in various aspects of global education, including exploring the meaning of global education, developing and participating in learning abroad experiences, and discussing how educators can help students, colleagues, and members of the community become more globally educated. (30-0)

**ED 369      Educating for Global Participation with Travel      3 Sem Hrs**

Prerequisite: Open to all full and part-time faculty and staff and by permission of instructor. Assists educators in various aspects of global education, including exploring the meaning of global education, developing and participating in learning abroad experiences, and discussing how educators can help students, colleagues, and members of the community become more globally educated. Requires participation in a learning abroad experience. (45-0)

**ED 370      Educating for Global Participation with Module      3 Sem Hrs**

Prerequisite: Open to all full and part-time faculty and staff and by permission of instructor. Assists educators in various aspects of global education, including exploring the meaning of global education, developing and participating in learning abroad experiences, and discussing how educators can help students, colleagues, and members of the community become more globally educated. Requires class module or project. (45-0)

**ED 384      Delta College Staff Ambassador Development      3 Sem Hrs**

Provides Delta College staff with an opportunity to learn about the divisions, departments, processes, and systems at Delta College. Explores the contribution of the employee's role to the College mission, vision, and values. (45-0)

**ED 385 Leadership Culture 3 Sem Hrs**  
Prerequisite: ED 384 and one year Delta College employment. Prepares Delta College employees to enhance their responsibilities by understanding, developing, and demonstrating their leadership skills and abilities. Practices leadership activities in College or community. Explores the focus on worklife contributions within the learning centered organization. (45-0)

**ED 386 Communication in the Classroom 2 Sem Hrs**  
Prerequisite: Permission of Instructor to register. Focuses on identifying, describing, and then explaining communication between students and between students and instructor. Explores aspects of verbal and nonverbal communication such as impact of voice, facial expression, body language, body movement, and physical proximity. Includes research highlighting the impact of an instructor's communication repertoire on student success. Requires completion of a project focused on development of improved/refined communication strategies for instruction. (30-0)

**ED 387 Reflective Practice: Education for Personal and Professional Growth 2 Sem Hrs**  
Prerequisites: Open to all full and part-time faculty and staff and by permission of instructor. Explores, in a communal atmosphere of trust and thoughtfulness, the roles of reflection, community, and creativity in the development of meaning and purpose in the personal and professional lives of educators. Explores questions of pedagogical meaning and purpose common to educators, and connects these with practices such as reflective writing, readings in a variety of disciplines, and creativity intended as springboards for personal and classroom applications. Includes a meaningful project such as a series of self-guided readings, an introspective practice like meditation, a journal, memoir, revamped syllabus, set of classroom practices, or other appropriate self-generated project. (30-0)

**ED 388 Exploring Diversity 2 Sem Hrs**  
Prerequisite: Instructor permission to register. Provides a foundation in knowledge and application of issues and principles surrounding diversity. Provides an opportunity to explore, reflect and practice an interdisciplinary approach to the study of diversity. Credit may be earned in only one of the following: SSI 288, SSI 289, ED 388, ED 389, IHU 280, or IHU 281. (30-0)

**ED 389 Exploring Diversity/With Project 3 Sem Hrs**  
Prerequisite: Permission of instructor. Provides a foundation in knowledge and application of issues and principles surrounding diversity. Provides an opportunity to explore, reflect and practice an interdisciplinary approach to the study of diversity. Includes completion of project. Credit may be earned in only one of the following: SSI 288, SSI 289, ED 388, ED 389, IHU 280 or I HU 281. (45-0)

**ED 390 Best Practices in Teaching and Learning 3 Sem Hrs**  
Prerequisite: Instructor permission to register. Addresses topics and skills essential for effective and innovative teaching and learning practices. Explores the dynamics of teaching and learning and provides models, strategies, and options that emphasize active learning and reflective teaching. (45-0)

**ED 391 Academic Service-Learning 1 Sem Hr**  
Prerequisite: Open to all full and part-time faculty, community service partners, and by permission of instructor. Introduces academic service-learning pedagogy across the disciplines. Develops a service-learning community-based project focusing on course outcomes and/or general education components. Incorporates the essential elements of enhanced academic learning meaningful to the community, and heightened civic engagement; and develops a plan to access all three elements. (15-0)

**ED 392 Internet Teaching Techniques for Teachers 3 Sem Hrs**  
Prerequisite: Open to all full and part-time faculty and staff and by permission of instructor. Provides those with basic internet skills the tools and knowledge to create strategies and practices that use Internet tools (e-mail, discussion list, WWW, search engines, chat programs) to enhance student learning. (45-0)

**ED 392X Advanced Internet Teaching Techniques 3 Sem Hrs**  
Prerequisite: ED 392 or at least one semester of teaching online or in a blended setting; or equivalent training and experience. Provides those who have had experience teaching online with an opportunity to revise one area of their online course(s) through incorporating advanced communication and media tools. (45/0)

**ED 393 Understanding Student Learning 2 Sem Hrs**  
Explores the process of learning and provides fuller understanding of the biological and sociocultural factors that influence human learning. Explores multiple intelligences and learning styles, neurological changes in the brain that accompany learning, cognitive development, motivation, and types of learning goals. Emphasizes the application of learning research to learning situations to encourage and enhance student learning. (30-0)

**ED 394I Development of Learning Community Interest Groups 3 Sem Hrs**  
Prerequisite: Open to all full and part-time faculty with permission of instructor. Examines learning communities theories and models most closely resembling Interest Groups (often called Freshman Interest Groups and Clusters at other institutions). Discusses concepts of interdisciplinarity, community, and continuing development and evaluation of Interest Groups both individually as separate learning communities and collectively as a distinct identity. Includes participation in on-line interactive journaling about assigned and recommended readings. Develops a capstone project to plan an interest group learning community. (45-0)

**ED 394 Theory and Pedagogy of Learning Communities 2 Sem Hrs**  
Prerequisite: Open to all full and part-time faculty and staff. Examines (in classroom seminars and by on-line listserv) learning communities theories and models, including concepts of interdisciplinary and community. Includes participation in on-line listserv interactive journaling about course readings and a capstone project to prepare a syllabus, one or two possible assignments, and at least one means of assessment for a proposed learning community. Designed for faculty, future teachers, and administrators. (30-0)

**ED 395R Introductory Theory and Methods of Reading Across Disciplines - Research Option 2 Sem Hrs**  
Prerequisite: Open to all full-time and part-time faculty or by permission of instructor. Introduces theory and practice of reading across disciplines including theories of reading development and strategies improving reading. Provides instruction and support in researching content area reading in individual disciplines. Leads to development of annotated bibliography about reading process and pedagogy in their discipline. Student may earn credit in ED 395R or ED 395, but not in both. (30-0)

**ED 395 Introductory Theory and Methods of Reading Across Disciplines 1 Sem Hr**  
Open to all full-time and part-time faculty or by permission of instructor. Introduces theory and practice of reading across disciplines including theories of reading development and strategies improving reading. Student may earn credit in ED 395 or ED 395R, but not both. (15-0)

**ED 396P Facilitating Developmental Learning with project 3 Sem Hrs**  
Prerequisite: Open to all full and part-time faculty and staff. Explores the process of assisting students in advancing from under-prepared to college-ready. Examines instructional methods conducive to promoting, developing, and sustaining student learning and success throughout the college curriculum. Synthesizes theory with best practices applicable to a variety of disciplines and learning levels. Course includes individual project. Credit may be earned in ED 396P or ED 396 but not in both. (45-0)

**ED 396 Facilitating Developmental Learning 2 Sem Hrs**

Prerequisite: Open to all full and part-time faculty and staff. Explores the process of assisting students in advancing from under-prepared to college-ready. Examines instructional methods conducive to promoting, developing, and sustaining student learning and success throughout the college curriculum. Synthesizes theory with best practices applicable to a variety of disciplines and learning levels. Credit may be earned in ED 396P or ED 396 but not in both. (30-0)

**ED 397 Introduction to Distance Learning 3 Sem Hrs**

Prerequisites: Open to all full and part-time faculty and staff and by permission of instructor. Teaches strategies for distance education technology, with particular emphasis on instructional design, two-way interactive television (ITV), for application in any field. (45-0)

**ED 398 Writing to Learn 1 Sem Hr**

Prerequisite: Open to all full and part-time faculty and by permission of instructor. Introduces theory and practice of "writing to learn," (WTL) including informal writing strategies to promote student response to lectures, readings, fieldwork, labs, discussions, etc.; rehearsal for other activities including discussions and formal writing; reflection on learning progress and problems; and dialogue with peers and instructor. (15-0)

**ED 399A Classroom Assessment Techniques .5 Sem Hr**

Prerequisite: Open to all full and part-time faculty and staff and by permission of instructor. Introduces classroom assessment techniques (CATs) and their use across disciplines. Develops and applies a variety of CATs to formatively assess different types of learning and student development. (7.5-0)

**ED 399 Using Classroom Assessment Techniques 2 Sem Hrs**

Prerequisite: Open to all full and part-time faculty and staff and by permission of instructor. Introduces classroom assessment techniques (CAT's) and their use across disciplines. Develops and applies a variety of CAT's to formatively assess different types of learning and student development. Includes investigation and development of CAT's as tools for classroom research. (30-0)

## Electric Distribution Design

**EDD 130 Electric Distribution Design I 4 Sem Hrs**

Prepares an employee with the basic knowledge of electrical distribution equipment and the skills to design and prepare work orders for construction of the basic service facilities through self-study. (72-0)

**EDD 132 Electric Distribution Design II 4 Sem Hrs**

Prerequisite: EDD 130. Continues the self-study course, Electric Distribution Design I. Prepares an employee with the basic knowledge of electrical distribution equipment and the skills to design and prepare work orders for construction of electric distribution facilities. (72-0)

**EDD 290-299 Special Projects in Electronic Distribution Design**

## Electronic Engineering Technology

**EET 120 Digital Circuits 3 Sem Hrs**

Prerequisite: MTH 107 or H.S. equivalent. Studies fundamental concepts of digital electronics, including the +5 volt TTL family of integrated circuits, digital number systems, Boolean algebra, Karnaugh maps, combinational logic circuits, counters, latches, flip-flops and shift registers. Introduces basic memory concepts and circuits. (30-30)

**EET 215 Electrical Controls and Automation 5 Sem Hrs**

Prerequisites: EET 235 or 210. EET 210 can be taken concurrently with instructor consent. Studies industrial control logic design and application with emphasis on ladder logic, relay and T-switch logic formats. Uses Modicon micro 84 to study programmable controller logic. Covers 4-layer semiconductors (SCRs-TRIACS-UJTS-PUTS-DIACS), their characteristics and applications. Studies application of electronic control systems to machine processes with emphasis on transducers, I/O interfaces, control processors and output drivers. (60-30)

**EET 226 Computer Electronics 6 Sem Hrs**

Prerequisite: EET 102 and EET 120. Introduces computer electronics with an emphasis on programming microcontroller computers using the C programming language. Teaches students to design projects that combine hardware and software to create applications that interface microcontrollers to other computers and to analog and digital circuits. (90-0)

**EET 230 Soldering Techniques 1 Sem Hr**

Develops skill in soldering and printed circuit board fabrication and repair, using commonly accepted industrial practices. Covers safety, chemical handling, contamination of work area, grounding, materials, and waste handling. Producing a functioning printed circuit assembly is required. (8-22)

**EET 235 Electrical Circuits 3 Sem Hrs**

Prerequisite: MTH 119 or MTH 119A or appropriate assessment scores. Studies DC and AC circuit fundamentals including a general introduction to industrial control concepts. (30-30)

**EET 290-299 Special Projects in Electronic Engineering Technology**

## Engineering

**EGR 100 Careers in Engineering 1 Sem Hr**

A study of Engineering as a profession as well as a career. Surveys the various fields such as Mechanical, Electrical, Civil, etc. Compares an engineer with a technologist. Reviews work responsibilities, ethics, the work environment, challenges, salaries. (15-0)

**EGR 101 Engineering Design and Analysis 1 Sem Hr**

Applies critical thinking concepts to engineering problem solving strategies. Uses student work teams to solve a problem or develop a design on paper using the engineering design process. Uses research techniques on the Web or library, brainstorming for idea generation, criterion selection, and presents information in an oral and written format. (15-0)

**EGR 165 Introduction to Engineering Graphics 4 Sem Hrs**

A study of the graphic language applied to mechanical and civil engineering design. Develops skills in orthographic projection, multi-view drawings, isometric drafting, sectioning, auxiliary views, revolutions, developments, ANSI dimensioning, and tolerancing, annotation and descriptive geometry. Uses computer-aided drafting and analysis. Credit can be earned in EGR 165 or DRF 155 but not in both. (30-60)

**EGR 166 Engineering Graphics 4 Sem Hrs**

Prerequisite: One year of high school mechanical drafting with final grade of C (2.0) or higher. A study of the graphic language applied to mechanical design, review of multiview and isometric drafting, and the geometry of drawing. Emphasis on developing skills in using orthographic projections, sectional views, auxiliary views and revolutions, dimensioning and annotation, and descriptive geometry. Computer-aided methods in drafting and analysis are used for all topics studied. Students cannot obtain credit for both EGR 165 and EGR 166. (30-60)

**EGR 215 Engineering Mechanics, Statics 3 Sem Hrs**

Prerequisite: MTH 261 and PHY 211. (MTH 261 may be taken concurrently.) Develops skill in analyzing machine elements and structures, which are in static equilibrium. Using vector calculus, integration and algebra/trig. techniques, forces and moments are solved in 2D and 3D problems. Includes concepts of centroids and moments of inertia. Applied to mechanical linkages, disks and shafts, beams in bending, screw threads, trusses, frames, and vehicles. (45-0)

**EGR 216 Engineering Mechanics: Dynamics 3 Sem Hrs**  
Prerequisite: EGR 215. Aims at students needing a second course in mechanics for engineers. Covers kinematics and kinetics of particles and rigid bodies in 2D and 3D. Uses force/acceleration, energy and momentum methods and applications to machine elements and structures in mechanical engineering. (45-0)

**EGR 221 Engineering Materials 3 Sem Hrs**  
Prerequisite: CHM 111 and MTH 161 or equivalents. Introduces material classification based on their structure, properties and performance in various applications. Examines the micro and macro structures of metals, polymers, glasses, ceramics and composites and their structural relationship to their properties and performance in various applications. Focuses on phase diagrams, microstructural changes caused by solid-state transformations, elastic and plastic behavior, the effects of the environment, and application selection criteria. (45-0)

**EGR 235 Circuit Analysis 4 Sem Hrs**  
Prerequisite: MTH 161. Studies simple electrical components, rules, theorems and laws applicable to AC and DC circuits. Applies Kirchoff's laws, Thevenin's and Norton's theorems, superposition, current and voltage divider rules, etc., Introduces circuit design techniques further study in transient circuits and three-phase power systems. (45-0)

#### **EGR 290-299 Special Projects in Engineering**

**EGR 320 Mechanics of Materials 3 Sem Hrs**  
Prerequisite: EGR 215. Considers effects of tension and compression, shear, torsion, bending and buckling loads on structures and machine members and their consequent effects on stress distributions and deformations. Emphasizes design as well as analysis. (45-0)

### **Electronic Media**

**EM 280 Digital Film Capstone 2 Sem Hrs**  
Prerequisites: EMB 155 & ENG 258 with a grade of "C" or better. Provides experience in designing and producing digital short and/or partial feature films as part of production teams. Identifies, through teamwork, the specific production and postproduction needs for the projects and evaluates the clarity and quality of the writing, production design, and overall digital film product generated. (15-45)

### **Electronic Media Broadcasting**

**EMB 140 Electronic Media History 3 Sem Hrs**  
Concentrates primarily on Broadcasting History, its roots and parentage. Compares relationships between past issues and personalities with those of today. Answers the question: Where do we come from and where are we going as a profession? Credit may be earned in either BRT 140 or EMB 140 but not in both. (45-0)

**EMB 151 Media Production I 4 Sem Hrs**  
Introduces basic media production methods and equipment, including linear editors, video cameras and other hardware. Emphasizes developing comprehension of communication using visual and aural mediums, and the variety of media types and formats available. Acquires the basic production skills necessary for developing media projects. Uses Television and Radio Labs and Studios to instruct in basic elements of video and audio acquisition and production. Credit may be earned in either BRT 151 or EMB 151 but not both. (45-45)

**EMB 153 Broadcast Performance 3 Sem Hrs**  
Introduces students to broadcast performance. Emphasizes presentations before microphones and cameras. Examines dress, movement, make-up, lighting, and delivery in such major performance situations as interviews, discussions, newscasts, commercials, and product demonstrations. Credit may be earned in either BRT 153 or EMB 153 but not both. (30-30)

**EMB 154 Peripheral Multimedia Applications 2 Sem Hrs**  
Introduces and familiarizes student with operational elements of digital media, computer operating systems/platforms and peripheral multimedia applications which support and enhance digital non-linear video editing. Concentrates primarily on audio soundtracks, animated text, graphic design and proper compression for delivery to a variety of digital mediums. Emphasizes specific programs within the Macintosh OSX system. (15-30)

**EMB 155 Media Production II 4 Sem Hrs**  
Prerequisites: EMB 151 or BRT 151 with minimum grade of "C" (2.0) and EMB 154. Builds on the body of knowledge gained in EMB151/BRT 151 and EMB 154. Expands the knowledge and skill in composition of images and media, and integration of that media into finished productions. Introduces digital multimedia production, specifically Macintosh Computer systems and Final Cut Pro non-linear editors. Uses both studio and computer editing facilities to refine both audio and video production skills to develop and execute productions. Uses Television, Radio, and computer labs. Credit may be earned in either BRT 155 or EMB 155 but not both. (45-45)

**EMB 175 Genres in Film History 3 Sem Hrs**  
Examines major film styles and genres prevalent through the history of American cinema. Discusses groundbreaking works and popular film styles and analyzes their production values, editing techniques and influences on later films and other media. Researches individual directors and films and presents written critical analysis of technical and influential contributions to filmmaking. (45-0)

**EMB 211 Writing for Broadcast & New Media 3 Sem Hrs**  
Prerequisites: ENG 111 or ENG 111A or ENG 111H. Introduces and familiarizes the specialized writing styles in radio, TV, cable, new media and corporate/non-profit production. Includes, but is not limited to, news, promotional announcements, sports and advertisements. Emphasizes and analyzes various writing styles employed in the commercial, non-profit and corporate world and demonstrates that style through frequent writing. Credit may be earned in either BRT 211 or EMB 211 but not both. (45-0)

**EMB 227 Broadcast Sales 3 Sem Hrs**  
Prerequisites: ENG 111 or ENG 111A or ENG 111H. Explores basic marketing concepts in broadcast time and spot sales. Analyzes the psychological, sociological, economic, and communicative aspects of salesmanship as they apply to the broadcast industry. Prepares actual sales presentations for hypothetical clients. Brings practicing professionals in the broadcast sales field to share their experiences with the class. Credit may be earned in either BRT 227 or EMB 227 but not both. (45-0)

**EMB 233 Radio News and Programming 3 Sem Hrs**  
Prerequisites: BRT 155 or EMB 155. Introduces basic elements of Broadcast Radio News producing, reporting, and resources; develops understanding of Radio programming, formats, and differences between commercial and public radio. Produces news and programming projects utilizing analog and digital equipment. Credit may be earned in either BRT 233 or EMB 233 but not both. This course is only offered by individual instruction (please contact the program coordinator for details, 686-9101). (0-60)

**EMB 255 Media Production III 4 Sem Hrs**  
Prerequisites: BRT 155 or EMB 155 with "C" (2.0) minimum grade; BRT 211W or EMB 211W. Refines and utilizes skills gained in Media Production I and II with further instruction to produce and direct finished multimedia productions. Emphasizes producing and directing skills to maximize effectiveness. Produces and directs multimedia productions, including audio and video components, with specific outcomes for specific uses and audiences. Uses Television Studio and Computer labs. Credit may be earned in either BRT 255 or EMB 255 but not both. (60-30)

**EMB 275 DVD Design and Authoring 3 Sem Hrs**

Prerequisites: EMB 155. Provides a guide to every aspect of the process of authoring a Digital Versatile Disc. Examines the aesthetic elements involved in the creation of a navigational interface and the management of the video and data file contents of a DVD. Incorporates aspects of graphic design and digital video production to produce and deliver a final project DVD. Introduces DVD authoring software. Credit may be earned in EM 275 or EMB 275 but not both. (15-45)

**EMB 281 Internship I 1 Sem Hr**

Prerequisites: BRT 151 or EMB 151 with "C" (2.0) minimum grade and discipline approval. Provides advanced hands-on experience through internship with approved off-site electronic media company or organization. Requires 5 hours per week under direct supervision of onsite internship coordinator. This course is only offered by individual instruction (please contact program coordinator for details, 686-9473). Credit may be earned in either BRT 281 or EMB 281 but not both. This course is only offered by individual instruction (please contact program coordinator for details, 686-9473). (0-75)

**EMB 282 Internship II 2 Sem Hrs**

Prerequisites: BRT 151 or EMB 151 with "C" (2.0) minimum grade and discipline approval. Provides advanced hands-on experience through internship with approved off-site electronic media company or organization. Requires 10 hours per week under direct supervision of onsite internship coordinator. Credit may be earned in either BRT 282 or EMB 282 but not both. (0-150)

**EMB 283 Internship III 3 Sem Hrs**

Prerequisites: BRT 151 or EMB 151 with C (2.0) minimum grade and instructor approval. Provides advanced hands-on experience through internship with approved off-site electronic media company or organization. Requires 15 hours per week under direct supervision of onsite internship coordinator. Credit may be earned in either BRT 283 or EMB 283 but not both. This course is only offered by individual instruction (please contact program coordinator for details, 686-9473). (0-225)

**EMB 284 Public Broadcasting Practicum I 2 Sem Hrs**

Prerequisites: BRT 151 or EMB 151 with "C" (2.0) minimum grade and discipline approval. Provides advanced, practical experience through Delta College's Public Broadcasting facilities. Gives opportunities to produce and assist with productions of on-air broadcast programs. This course is only offered by individual instruction (please contact program coordinator for details, 686-9473). (0-60)

**EMB 285 Public Broadcasting Practicum II 2 Sem Hrs**

Prerequisites: BRT 151 or EMB 151; EMB 284 with "C" (2.0) minimum grade and discipline approval. Provides advanced, practical experience through Delta College's Public Broadcasting facilities. Gives opportunities to produce and assist with productions of on-air broadcast programs. This course is only offered by individual instruction (please contact program coordinator for details, 686-9473). (0-60)

**EMB 290-299 Special Projects in Electronic Media Broadcasting****Emergency Medical Service****EMS 110 Basic Emergency Medical Technician I 4 Sem Hrs**

Prerequisite: READING LEVEL 3, requires concurrent enrollment in EMS 111, 112 and 113, and instructor's permission. First in a sequence of four courses to prepare a student as a Basic EMT. Emphasis is placed on Emergency Medical Care, Medical/Legal/Ethical issues, didactic material including airway management, Patient Assessment, and general pharmacology. (65-0)

**EMS 111 Basic Emergency Medical Technician II 4 Sem Hrs**

Prerequisite: Requires concurrent enrollment in EMS 110, 112 and 113, and instructor's permission. Second in a sequence of four courses to prepare a student as a Basic EMT. Emphasis is placed on recognition and management of environmental and medical emergencies; verbal, written and radio communications; triage, emergency childbirth; and pediatric emergencies. (65-0)

**EMS 112 Basic Emergency Medical Technician III 2 Sem Hrs**

Prerequisite: Requires concurrent enrollment in EMS 110, 111 and 113 and instructor's permission. Third in a sequence of four courses to prepare a student as a Basic EMT. Emphasizes bandaging, splinting, backboarding concerning injuries to the head & spine as well as musculoskeletal systems. (32-0)

**EMS 113 Basic Emergency Technician Field Experience 2 Sem Hrs**

Prerequisite: Requires concurrent enrollment in EMS 110, 111 and 112 and instructor's permission. Fourth in a sequence of four courses to prepare a student as a Basic EMT. Clinical rotation for EMT (hospital & ambulance). Successful completion of this course and EMS110, EMS111 and EMS112 enables the student to apply for and take the National Registry exam to qualify for state licensing as a Basic EMT. (0-32)

**EMS 290-299 Special Projects in Emergency Medical Service****English****ENG 090 Introduction to Academic Writing and Reading 5 Sem Hrs**

Prerequisite: READING LEVEL 1 and WRITING LEVEL 1: Provides those who are not yet prepared for academic work in the regular composition sequence (ENG 111A, ENG 111, ENG 112) with opportunity to improve their reading and writing skills in an interactive and collaborative setting. Includes practice of personal and academic writing with special attention given to individual needs, which may include organization, sentence structure and variety, correct usage, and vocabulary development. Practices active reading strategies to understand, interpret, and apply information from reading. Does not earn credit towards graduation. Must earn a grade of "C" or better in ENG 090 for progression to the next level. (75-0)

**ENG 098 Preparation for College Reading and Writing 4 Sem Hrs**

Prerequisite: READING LEVEL 2 and WRITING LEVEL 2. Provides those who are not yet prepared for academic work in the regular composition sequence (ENG 111A, ENG 111, ENG 112) with opportunity to improve their reading and writing skills in an interactive and collaborative setting. Practices intensively active reading strategies needed to understand, interpret, and apply ideas and information from reading. Includes practice with personal and academic writing. Does not earn credit for graduation. (60-0)

**ENG 104 Applied Spelling Techniques 2 Sem Hrs**

Emphasizes English spelling patterns and sequences as well as techniques for approaching spelling for adult learners. Shows students how to apply critical thinking strategies to identify and meet their individual spelling needs. (30-0)

**ENG 105 English as a Second Language 5 Sem Hrs**

Aids the speaker of English as a second language with intermediate and advanced English language skills to communicate in academic and social settings. Includes speaking, listening, reading, composition, non-verbal communication and American culture. (75-0)

**ENG 107 Elements of Grammar 2 Sem Hrs**

Acquaints or refreshes students with useful, basic grammatical concepts and options in written language. Includes illustration and practice of sentence structure, usage, and punctuation. Strengthens writing skill and language awareness in college or in the work force. (30-0)

**ENG 108 Effective Reading and Vocabulary Development I 4 Sem Hrs**

Prerequisite: READING - Level 3. Designed for those whose academic and personal needs call for building skills, confidence, greater comprehension, and enjoyment of reading. The course includes techniques for understanding and remembering a wider reading vocabulary. Consideration will be given to applying reading strategies to a wide variety of reading materials under the guidance of an instructor. (60-0)

**ENG 109 Academic Reading 3 Sem Hrs**  
Prerequisite: READING - LEVEL 4. Designed for those who are good readers, but who still need to make improvements in reading, vocabulary, and critical thinking to become successful and independent college students. Provides instruction and practice in study-reading college level texts; opportunities for self-selected research, reading and sharing of information; and the chance to select and read imaginative materials for pleasure and increased self-confidence as a reader. (45/0)

**ENG 111 College Composition I 3 Sem Hrs**  
Prerequisite: READING LEVEL 5 and WRITING LEVEL 4. Develops fluent, effective, and confident writers. Practices the process of composing; generating ideas; shaping and evaluating writing. Uses reading and language awareness to further the development of writing. Credit may be earned in only ENG 111 or ENG 111A or ENG 111B or ENG 111C or ENG 111H. (45-0)

**ENG 111A Writing Methods/College Composition I 5 Sem Hrs**  
Prerequisite: READING LEVEL 5 and WRITING LEVEL 3. Develops fluent, effective, and confident writers. Practices the process of composing; generating ideas; shaping and evaluating their writing. Uses reading and language awareness to further the development of their writing. Of the five credits earned in this course, three will transfer to universities and partially fulfill the college's English composition requirement. Although the other two hours do not transfer, they do provide a solid background necessary toward success in all college courses. Credit may be earned in only ENG 111 or ENG 111A, or ENG 111H. (75-0)

**ENG 111B Writing Methods/College Composition I 5 Sem Hrs**  
Prerequisites: READING LEVEL 4. Practices the process of composing; generating ideas; shaping and evaluating their writing. Uses reading and language awareness to further the development of their writing. Of the five credits earned in this course, three will transfer to universities and partially fulfill the college's English composition requirement. Although the other two hours do not transfer, they do provide a solid background necessary toward success in all college courses. ENG 111B is intended to only be taken in a learning community combination. Credit may be earned in one of the following: ENG 111 or ENG 111A or ENG 111B or ENG 111C or ENG 111H. (75-0)

**ENG 111C Writing Methods/College Composition I 5 Sem Hrs**  
Prerequisite: READING LEVEL 3 and WRITING LEVEL 3. Practices the process of composing; generating ideas; shaping and evaluating their writing. Uses reading and language awareness to further the development of their writing. Of the five credits earned in this course, three will transfer to universities and partially fulfill the college's English composition requirement. Although the other two hours do not transfer, they do provide a solid background necessary toward success in all college courses. ENG 111C is intended to only be taken in a learning community combination. Credit may be earned in one of the following: ENG 111 or ENG 111A or ENG 111C or ENG 111H. (75-0)

**ENG 111H College Composition I - Honors 3 Sem Hrs**  
Prerequisite: READING LEVEL 5 and WRITING LEVEL 4 and permission of the Honors Office. Develops fluent, effective, and confident writers. Practices the process of composing; generating ideas; shaping and evaluating writing. Uses reading and language awareness to further the development of writing. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in only ENG 111 or ENG 111A or ENG 111B or ENG 111C or ENG 111H. (45-0)

**ENG 112 College Composition II 3 Sem Hrs**  
Prerequisite: READING LEVEL 6. Expands students' abilities and versatility in reading, language awareness, and composing for a range of purposes, audiences, and situations, including academic research writing. Credit may be earned in only ENG 112 or ENG 112A or ENG 112H. (45-0)

**ENG 112A Writing Methods/College Composition II 5 Sem Hrs**  
Prerequisite: READING LEVEL 6. Expands students' abilities and versatility in reading, language awareness, and composing for a range of purposes, audiences, and situations, including academic research writing. Of the five credits earned in this course, three will transfer to universities and partially fulfill the college's English composition requirement. Although the other two hours do not transfer, they do provide a solid background necessary toward success in all college courses. Credit may be earned in only ENG 112 or ENG 112A or ENG 112H. (75-0)

**ENG 112H College Composition II - Honors 3 Sem Hrs**  
Prerequisite: READING LEVEL 6 and permission of the Honors Office. Expands students' abilities and versatility in reading, language awareness, and composing for a range of purposes, audiences, and situations, including academic research writing. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in only ENG 112 or ENG 112A or ENG 112H. (45-0)

**ENG 113 Technical Communication 3 Sem Hrs**  
Prerequisite: READING: LEVEL 6. Covers techniques for presentation of technical material in formal and informal written reports, letters and other current forms of business and technical communication. Emphasizes general principles used for successful written communication experiences in the professional world and the development of thinking and organizational skills, with specific applications to technical courses or professional case studies. (45-0)

**ENG 115 Mass Media 3 Sem Hrs**  
Surveys books, newspapers, magazines, recordings, film, radio, television, advertising, public relations and electronics. Includes media history operations, products, current issues and criticisms (45-0)

**ENG 116 News Writing 3 Sem Hrs**  
Prerequisite: ENG 115 or permission of instructor. Studies fundamental principles of gathering information and writing basic news stories. Emphasizes the elements of news, the lead, Associate Press style, news sources and structures of news stories. (30-30)

**ENG 120 Introduction to Creative Writing 3 Sem Hrs**  
Prerequisite: READING LEVEL 6 or 6B or WRITING LEVEL 5 or 5B. Begins the exploration of personal writing, fiction, drama, and poetry. Focuses on understanding the basics of each genre and practicing them. Includes peer critique, instructor comments, and extensive revisions. (45-0)

**ENG 195 Library Research Skills 2 Sem Hrs**  
Develops information literacy for success with college-level academic research. Credit may be earned in LIB 195W or ENG 195W but not in both. (30-0)

**ENG 211 Advanced Composition 3 Sem Hrs**  
Prerequisite: READING LEVEL 7 or ENG 113 or permission of instructor. Continues to practice forms of academic writing such as the summary, report based upon research, and the analytical essay. Emphasizes writing process and examines the origins and purpose of academic discourse. Approaches may include workshops, conferencing, publication and word processing at the discretion of the instructor. (45-0)

**ENG 211H Advanced Composition 3 Sem Hrs**  
Prerequisite: READING LEVEL 7 and permission of Honors Program Office. Continues to practice forms of academic writing such as the summary, report based upon research, and the analytical essay. Emphasizes writing process and examines the origins and purpose of academic discourse. Approaches may include workshop, conferencing, publication and word processing at the discretion of the instructor. (45-0)

**ENG 213 Advanced Technical Communication 3 Sem Hrs**  
Prerequisite: ENG 112 or ENG 113 with a "C" (2.0) or better. Provides experience in the written and oral presentation of technical material. Includes practice in professional formal and informal written reports, research in technical, scientific, or medical topics. Strengthens skills in professional level writing style and applications. Practices online research, document production, and technology application. (45-0)

**ENG 214 Introduction to Professional Writing 3 Sem Hrs**

Prerequisite: READING LEVEL 7 or permission of instructor. Introduces students to genres unique to professional writers, such as review writing, grant writing, freelance writing, and magazine writing, and will highlight issues of marketability. (45-0)

**ENG 217 Advanced Reporting 3 Sem Hrs**

Prerequisite: ENG 116. Focuses on advanced journalistic techniques and news gathering methods, handling specialized assignments in government, crime, courts, sports, business and education plus editorial columns and entertainment reviews. Class members work on The Delta Collegiate. (30-30)

**ENG 253 Creative Writing: Poetry 3 Sem Hrs**

Prerequisite: READING - LEVEL 7. A course in the writing of poetry. Students are encouraged to develop their own poetry writing skills and understanding. In addition to other classroom activities, there are discussions and writing assignments. The instructor may also choose to require analysis of published poetry and criticism. (45-0)

**ENG 254 Creative Writing: Fiction 3 Sem Hrs**

Prerequisite: READING - LEVEL 7. Focuses on the writing of prose--chiefly short stories. Encourages students to develop their own writing styles. Includes other classroom activities, discussions and writing assignments, requiring analysis and criticisms of other students' work. (45-0)

**ENG 256 Personal Writing 3 Sem Hrs**

Prerequisite: READING - LEVEL 7 or permission of instructor. Requires students to draw on personal experiences and viewpoints to produce a range of writing, and read and respond to published works of creative nonfiction. Includes reading memoirs, autobiographies, journals, essays, and other subjective literary forms. Emphasizes both generating and revising writing. (45-0)

**ENG 257 Advanced Creative Writing 3 Sem Hrs**

Prerequisites: ENG 253 or ENG 254 or ENG 256. Uses previous background in personal writing, fiction, or poetry. Includes work on style, voice, tone, vision, and other nuances in chosen genre. Includes peer critique, instructor comments, extensive revision, and close study of a contemporary or classic writer in the chosen genre. (45-0)

**ENG 258 Introduction to Screenwriting 2 Sem Hrs**

Prerequisite: READING LEVEL 6 or permission of instructor. Begins the exploration of screenwriting. Focuses on understanding the basics of the genre, especially formatting and movie planning. Includes peer critique, instructor comments, and extensive revision. (30-0)

**ENG 259 Advanced Screenwriting 2 Sem Hrs**

Prerequisite: ENG 258W. Builds from skills learned in ENG 258W. Explores character, plot, and dialogue development as they relate to screenwriting. Focuses on the completion of a short film screenplay or first thirty pages of a longer work. Includes peer critique, instructor comments, and extensive revision. (30-0)

**ENG 290-299 Special Projects in English**

## Entrepreneurship

**ENT 101 Accounting for Entrepreneurs 3 Sem Hrs**

Focuses on small business accounting literacy, financial statement literacy, and decision making. Uses an integrated commercial accounting software package typically used by a small business. Teaches how to process basic accounting events affecting the small business. (45-0)

**ENT 131 Entrepreneurship/Small Business Management I 3 Sem Hrs**

Provides overview of small business and what is necessary to start a small business including small business in free enterprise, the entrepreneur, opportunities and trends, business plan, legal aspects, location, financing, organizational planning, and marketing. Assists those who are currently operating a small business. Uses case studies throughout the course. Credit may be earned in only one of the following courses: ENT 131, GB 131, or MGT 131. (45-0)

**ENT 132 Entrepreneurship/Small Business Management II 3 Sem Hrs**

Prerequisite: ENT 131 is recommended. Strengthens the entrepreneurial and management skills of those who are already in (or who may enter) business for themselves. Uses small business case studies extensively. Credit may be earned in only one of the following courses: ENT 132, GB 132, or MGT 132. (45-0)

**ENT 201 Financial Management for Entrepreneurs 3 Sem Hrs**

Prerequisite: ENT 101. MATH LEVEL 4 recommended. Focuses on developing skills for small business financial management. Uses tools and methods to help students prepare and analyze business financial statements, set short- and long-term business goals, and develop decision-making skills. Encourages students to use their own business or start-up concept to evaluate profitability, cost-volume-profit, forecasting, and working capital management. (45-0)

**ENT 221 Law for Entrepreneurs 3 Sem Hrs**

Prerequisites: READING LEVEL 5 or 5B and WRITING LEVEL 4 or 4B or instructor permission. Provides a legal framework for individuals planning to start their own business. Studies particular areas of law including sources of law, the court system, government regulation, international trade laws, intellectual property, contracts, sales, and employment law. (45-0)

**ENT 290-299 Special Projects in Entrepreneurship**

## Environmental Science

**ENV 100 Environmental Regulations 3 Sem Hrs**

Presents an overview of the regulations that are related to environmental protection, including OSHA regulations, Clean Air Act, SARA, RCRA and similar regulations. Provides an awareness of why the regulations exist, how they are enforced, penalties for noncompliance, and practical experience in interpretation of the regulations. (Cannot be counted toward Natural Science credit). (45-0)

**ENV 105 Introduction To Environmental Health & Safety 3 Sem Hrs**

Introduces students to the safety requirements and regulations needed to successfully direct a safety program on an industrial site. (45-0)

**ENV 130 Pollution Prevention 1 Sem Hr**

Provides a study of protecting the environment, reducing waste generation, environmental compliance, preventing future liability associated with non-compliance and improper disposal of hazardous wastes, and improving profitability of an operation through pollution prevention techniques and practices. (15-0)

**ENV 151 HAZWOPER Training 2.7 Sem Hrs**

Involves hands-on training in the use of personal protective equipment, monitoring and sampling techniques, and decontamination techniques relative to hazardous materials in the workplace. Emphasizes rationale for following specific procedures, evaluations, relative merits of equipment and materials used. Establishes criteria for evaluation of field experience. Meets requirements of 40 hour HAZWOPER training. May be offered through Delta College Corporate Services or credit by prior experience as reviewed by the Science Division. (Cannot be counted toward Natural Science credit.) (40-0)

**ENV 152      Emergency Response to Industrial Spills      1.6 Sem Hrs**

Provides mandated training (24 hours) for emergency response to industrial spills, including use of protective equipment, sampling techniques, and decontamination methods. May be offered through Delta College Corporate Services or credit by prior experience as reviewed by the Science Division. (Cannot be counted toward Natural Science credit.) (24-0)

**ENV 153      Confined Space Training      1.3 Sem Hrs**

Provides mandatory training (20 hours) required for confined space entry relative to hazardous materials spills and contamination in the industrial sector. Includes protocols, monitoring methods, types and use of protective gear, and communication methods necessary to protect workers in potentially hazardous confined space. May be offered through Delta College Corporate Services or credit by prior experience as reviewed by the Science Division. (Cannot be counted towards Natural Science credit.) (20-0)

**ENV 154      Hazardous Materials Shipping and Handling      0.4 Sem Hr**

Provides training pertinent to the mandatory protocols for the shipping and handling of hazardous materials, including packaging, labeling documentation, and placarding. May be offered through Delta College Corporate Services or credit by prior experience as reviewed by the Science Division. (Cannot be counted towards Natural Science credit.) (6-0)

**ENV 290-299      Special Projects in Environmental Science Courses**

**ENV 310      Environmental Site Assessments      3 Sem Hrs**

Provides overview of standard methods for assessing recognized environmental conditions affecting commercial real estate. Covers standard procedures that aid in the environmental assessment of properties for potential legal and economic impacts of pre-existing environmental conditions. Includes legal responsibilities, financial penalties, safe working conditions, and legally accepted standard procedures for environmental site assessment. Emphasizes ASTM Phase I & II including analysis of case studies. Includes participation in an environmental site assessment. (45-0)

**ENV 320      Environmental Management Systems      3 Sem Hrs**

Provides a systematic method of assessing an organization's environmental aspects that protect the environment and the organization from fines and other regulatory penalties. Identifies and addresses environmental issues through standardized environmental management systems. Focuses on ISO 14000 environmental management standards. (45-0)

## Electrical Technology

**ET 110      DC Electrical Fundamentals      3 Sem Hrs**

Prerequisite: Any approved Physics with a grade of "C" or better. Introduces basic electrical theory and the components that make up electrical circuits. Includes resistive, capacitive, and inductive components in series and parallel, DC combinations, Ohm's Law, Kirchhoff's current and voltage laws, the voltage divider rule, and RC time constants. Uses a digital multimeter and oscilloscope to build and troubleshoot DC circuits. Includes but is not limited to basic circuits, electrical components and their applications; covers hands-on reinforcement of theory during lecture. (30-30)

**ET 120      AC Electrical Fundamentals      3 Sem Hrs**

Prerequisite: Any Physics course with a grade of "C" or better. Analyzes and measures electrical circuits. Examines properties of voltage and current, and describes transformer characteristics. (30-30)

**ET 122      Programmable Logic Controllers      4 Sem Hrs**

Prerequisite: ET120 with a grade of "C" or better: Introduces students to programmable logic controllers (PLCs) along with the interface to hydraulic/pneumatic systems and sensors. Focuses on the underlying principles of how PLCs work and provides knowledge and hands-on training to program, modify, interface, troubleshoot, and maintain PLC systems both on- and off-line. Emphasizes a hands-on approach to system analysis, critical thinking, solutions to open-ended problems, and computer usage and teamwork. Demonstrates proper safety techniques and proper use of personal protective equipment. No previous knowledge of PLC systems or programming is required. Credit may be earned in ET 122 or SKEL 122 but not both. (30-30)

**ET 130      Advanced Electrical Applications      3 Sem Hrs**

Prerequisite: ET120 with a grade of "C" or better: Identifies motor components for a practical application. Develops skills of motor control wiring, connection diagrams, and ladder diagrams while complying with National Electric Code requirements. Applies knowledge to select, connect, and configure an electrical motor application. (30-30)

**ET 140      Fundamentals of Electrical Motors and Motor Controls      3 Sem Hrs**

Prerequisite: ET120 with a grade of "C" or better: Introduces the theory and application of AC and DC electrical machines and their controls. Includes DC generators, DC motors and controls, 3-phase power, 3-phase transformers, alternators, 3-phase and single phase AC motors and controls, electronic motor drives, synchronous motors, servo motors, and stepper motors. Configures, installs, and operates direct current and alternating current motors. (30-30)

**ET 162      Industrial Robotics I      3 Sem Hrs**

Prerequisites: ET 120 and MT 220; Studies modern industrial robotic systems. Introduces the operation, use and safety of industrial robots. Includes feedback mechanisms, actuators, sensors, power supplies, micro-controllers, P.C. computer control and programming. Emphasizes a hands-on approach to system analysis, critical thinking, solution to open-ended problems, computer usage, and teamwork. Credit may be earned in ET 162 or SKET 162 but not both. (15-30)

**ET 164      Robotics Electrical Service & Troubleshooting      3 Sem Hrs**

Prerequisites: ET 120 and MT 220; Identifies the electrical components of robots, theory of operation. Introduces proper troubleshooting procedures for the robot controller and manipulator. Approximately 50 percent of the course is hands-on troubleshooting of actual robot system and controller. Credit may be earned in ET 164 or SKET 164 but not both. (15-30)

**ET 262      Industrial Robotics II      3 Sem Hrs**

Prerequisite: ET 162. Emphasizes programming, advanced manipulation, grip load instructions, velocity and acceleration instruction, offline editing, handling errors, and robot configuration. Discusses programming concepts and structures in the C+ programming language, industry-like applications and system integration projects. Emphasizes a hands-on approach to system analysis, critical thinking, solutions to open-ended problems, computer usage, and teamwork. Credit may be earned in ET 164 or SKET 262 but not both. (15-30)

**ET 290-299      Special Projects in Electrical Technology**

## French

**FR 111      French One      4 Sem Hrs**

A beginning course presenting the basic structure of the French language with drills for correct pronunciation and grammar usage. Emphasis is placed on understanding and using spoken as well as written French. Supplemental work with cassette tapes is expected. (60-0)

**FR 112      French Two      4 Sem Hrs**

Prerequisite: FR 111 or one year of high school French. A continuation of FR 111 with further development of oral and written skills. (60-0)

**FR 211 French Three 4 Sem Hrs**  
Prerequisite: FR 112 or two years of high school French. Continued application of principles of French grammar by means of conversation and composition practice. Classes conducted as much as possible in French. (60-0)

**FR 212 French Four 4 Sem Hrs**  
Prerequisite: FR 211 or three years of high school French. A continuation of FR 211, with further development of oral and written skills. (60-0)

**FR 290-299 Special Projects in French Sem Hr**

## Fire Science Technology

**FST 101 Introduction to the Fire Service 3 Sem Hrs**  
The student will analyze national fire problems, examine fire prevention procedures, identify fire fighters equipment, interpret fire codes and standards, recognize transportation hazards, study wild-fire methods, work with outside fire agencies, identify citizen responsibility, and study future fire problems. (45-0)

**FST 102 Fireground Tactics 3 Sem Hrs**  
Prerequisite: FST 101 or FST 112. Analysis of basic rules of fire fighting strategy, defining engine company responsibilities, determining ladder company functions, correlating MUTUAL AID fires, and general fire problems will be included. (45-0)

**FST 103 Building Construction 3 Sem Hrs**  
Provides a comprehensive look at the methods and practices employed in residential construction as it pertains to fire science. Structural design, blueprints, building materials, and mechanical considerations are covered. (45-0)

**FST 104 Arson Awareness 3 Sem Hrs**  
A comprehensive study of national, state and local arson problems. Examines the local fire department role in reducing arson related fire losses. Examines the duties of and assistance provided by governmental agencies and the private sector. Analyzes local fire statistics to enable the development of an arson data system. Develops effective arson mitigation strategies. (45-0)

**FST 105 Hazardous Materials/Emergency Responder 3 Sem Hrs**  
A comprehensive study of the physical, chemical, and toxicological characteristics of hazardous materials needed to safely and productively address emergency situations that can occur with these substances. (45-0)

**FST 107 Fire Protection Systems I 3 Sem Hrs**  
A comprehensive study of fire protection systems in buildings. Include design, blueprints, inspection and maintenance of automatic sprinkler systems, standpipe systems, special automatic extinguishing systems, smoke control systems, automatic and manual fire alarm systems, rated fire assemblies and other protection found in structures that help retard the propagation of fire. (45-0)

**FST 111 Fire Fighter IA 6 Sem Hrs**  
FST 111 and FST112 must be taken together. Prepares a participant to test for MFFTC certification as Fire Fighter I based on the Michigan Fire Fighters Training Council IFSTA curriculum. Contains an in-depth menu of information and exercises that meet the National Fire Protection Association (NFPA) 1001 standard. (90-0)

**FST 112 Fire Fighter IB 6 Sem Hrs**  
FST111 and FST 112 must be taken together. Continues to investigate the Michigan Fire Fighters Training Council IFSTA curriculum and prepares a participant to test for MFFTC certification as Fire Fighter I. Contains an in-depth menu of information and exercises that meet the National Fire Protection Association (NFPA) 1001 standard. (90-0)

**FST 114 Firefighter Safety and Survival 0.8 Sem Hr**  
Increases awareness of seriousness of firefighter injury/death problem; identifies firefighter responsibility for reducing injuries and deaths, and provides information to improve safety considerations through all aspects of a company officer's job. (12-0)

**FST 115 Managing Company Tactical Operations: Preparing (MCTO:P) 0.8 Sem Hr**  
Provides basic foundation for management of one or more companies operating at a structural fire emergency. Focuses on basic concepts: Roles and Responsibility, Readiness, Communication, Building Construction, Fire Behavior and Pre-incident Preparation. (12-0)

**FST 116 Building Construction Principles 0.8 Sem Hr**  
Improves student's ability to assess building stability and resistance to fire through an understanding of principles in construction type, alterations, design, and materials that influence a building's reaction to fire. (12-0)

**FST 117 Managing Company Tactical Operations: Decision Making (MCTO:D) 0.8 Sem Hr**  
Prepares Fire Officers and Crew Leaders for appropriate response, decision making and tactical operations of one or more companies in structural fire fighting. (12-0)

**FST 118 Records and Reports 0.4 Sem Hr**  
Introduces various records and reports the fire officer will encounter: describes and demonstrates selected standard procedures in compiling information and exposes student to methods of writing and presenting reports. (6-0)

**FST 120 Fire Service Educational Methodology 1 Sem Hr**  
Develops skill in preparing instructional objectives, designing effective lesson plans, developing evaluation instruments, and creating state-of-the-art media. (15-0)

**FST 133 Computer Aided Management Emergency Operations 3 Sem Hrs**  
Emphasized the use of Computer Aided Management of Emergency Operations (CAMEO), Areal Locations Of Hazardous Atmosphere (ALOHA), and Mapping Applications for Response and Planning of Local Operational Tasks (MARPLOT) software which provides a tool to manage emergency response, emergency planning and regulatory compliance of hazardous substance in or near their communities. Focuses on basic and advanced applications to provide computer skills to individuals, response teams and first responders to plan for the safe handling of chemical accidents. (45-0)

**FST 202 Fire Officer I 5 Sem Hrs**  
Prerequisite: FST 211 and FST 301. Presents "real world contemporary issues" that pose a challenge to supervisory leadership skills of the first line officer. Involves administrative and operational issues at the company/organizational level. Stimulates critical and creative thought process toward what we should be doing versus what we are actually doing as company officers. (60-15)

**FST 203 Fireground Management 3 Sem Hrs**  
Prerequisite: FST 102 or FST 112. A comprehensive study of the roles of the fireground commander including positioning the command post, equipment, and personnel on the scene, strategies for staging and sectoring operations along with command procedures and maintaining communications on the fireground. (45-0) (Every other year)

**FST 204 Fire Service Instructional Methodology 3 Sem Hrs**  
The student will have an opportunity to learn how to effectively organize and teach a lesson or course following the criteria in NFPA's Fire Service Instructional Professional Qualifications Level I (1976). (45-0) (Every other year)

**FST 205 Hazardous Materials/Emergency Operations 3 Sem Hrs**  
Prerequisite: FST 105. A comprehensive study of chemical transportation containers, emergency response equipment, and emergency response procedures needed to safely and productively address emergency situations that can occur with hazardous materials. (45-0)

**FST 206      Confined Space Management & Rescue 4 Sem Hrs**  
Provides participants with the knowledge and skills to minimize or eliminate hazards associated with entry into a permit required confined space. Focuses on OSHA 29 CFR 1910.146 and Michigan Department of Commerce and Industrial Services 325.3001 standards regulating the roles of entry supervisor, entrant, attendant and rescuer. Includes non-permit confined spaces hazards and entry conditions. Includes a hands-on entry and rescue simulation workshop. (45-15)

**FST 207      Fire Protection Systems II 3 Sem Hrs**  
Prerequisite: FST 107. A comprehensive study of fire protection system in buildings. Includes design standards, conducting plan review, inspection, testing and maintenance of fire alarms, automatic detection devices, manual devices, automatic sprinklers, foam-water, water spray, standpipe, water supply and automatic chemical agent systems. (45-0)

**FST 208      Fire Officer II 3 Sem Hrs**  
Prerequisite: FST 202. Focuses on highly specialized and complex technical issues the company officer must confront. Presents the inner workings and dynamics of a typical fire service organization. Involves decision making matrix process that embraces administrative functions and strategic planning of a mid-level company officer. Prepares the company officer in the management of multi-unit response operations; water supply, staging, safety, division/sector, exposure protection and unified command functions. (45-0)

**FST 211      Fire Fighter II 4 Sem Hrs**  
Prerequisite: FST111 & FST112. Prepares a participant to test for MFFTC certification as Fire Fighter II based on the Michigan Fire Fighters Training Council IFSTA curriculum. Contains an advanced in-depth menu of information and exercises that meet the National Fire Protection Association (NFPA) 1001 standard. (60-0)

**FST 213      Managing Company Tactical Operations: Tactics (MCTO:T) 0.8 Sem Hr**  
Prerequisite: FST117. Examines rescue and ventilation, confinement and extinguishment, water supply, exposures and defensive operations, and salvage, overhaul, and support. Concludes with a major fire simulation activity. (12-0)

**FST 214      Arson Detection for the First Responder 0.8 Sem Hr**  
Provides clear definition of the role of initial responder organizations, and essential knowledge to enable them to recognize the potential of an intentionally set fire, preserve evidence, and properly report the information to appropriate officials. (12-0)

**FST 215      Introduction to Fire Inspection Principles and Practices (IFIPP) 2 Sem Hrs**  
Advances professional development of fire service personnel in conducting fire prevention inspections and the rapid changes in the field of fire prevention technology. Includes code enforcement, inspection techniques, common and special hazards, behavior of fire, building construction, fire protection systems and life safety features. (30-0)

**FST 216      Building Construction Non-Combustible/Fire Resistive 0.8 Sem Hr**  
Improves ability of students to assess building stability and resistance to fire while improving operational effectiveness. Includes structural material, principles of fire growth, smoke movement and special problems. (12-0)

**FST 217      Fire Service Supervision: Personal Effectiveness 0.8 Sem Hr**  
Presents current research on management, leadership, stress, and time management and shows how to adapt information presented to personal specific management context. (12-0)

**FST 218      Fire Service Supervision: Team Effectiveness 0.8 Sem Hr**  
Demonstrates how communication, motivation, counseling, and the principles of conflicts resolution and group dynamics may be used to promote efficient group functioning and member satisfaction. (12-0)

**FST 219      Fire Protection Hydraulics & Water Supply 3 Sem Hrs**  
Prerequisites: FST 211 and MATH LEVEL 4. Provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. (45-0)

**FST 219L      Fire Protection Hydraulics & Water Supply Lab 1 Sem Hr**  
Prerequisites: FST 211 and MATH LEVEL 4. Concurrent or previous enrollment in FST 219. Applies theoretical knowledge, in a lab environment, through hands-on operation of pumping apparatus. (0-15)

**FST 220      Strategy & Tactics for Initial Company Officer 1 Sem Hr**  
Meets the needs of company officers responsible for managing the operations of one or more companies during structural firefighting operations. (15-0)

**FST 224      Fire Investigation 3 Sem Hrs**  
An in-depth basic course which defines successful methods for conducting fire investigations. Specific topics include basic chemistry of fire, point of origin and fire cause, both accidental and incendiary, motivation of the firesetter, fire scene investigation, evidence collection, photography, follow-up investigation and court presentation. (45-0)

**FST 230      Fire Safety Education 3 Sem Hrs**  
A comprehensive study of national state and local fire safety education program strategies. Implementation of the five step planning process at the local level. Development of skills necessary to organize, plan and use sound management of financial, material, and human resources to reach designated goals and objectives, to address the demonstrated fire safety education needs of the local community. (45-0) (Every other year)

**FST 231      Fire Service Law 3 Sem Hrs**  
Basic introduction to the legal considerations that can affect the professional lives of members of the fire service, fire service-related occupations, and those who aspire to careers in the fire service. (45-0) (Every other year)

**FST 240      Internship in Fire Science 2 Sem Hrs**  
Prerequisite: Minimum 15 credits in Fire Science courses and faculty permission. Provides the opportunity to observe and practice technical applications in the field. (0-100)

**FST 280      Company Officer 1 & 2 4 Sem Hrs**  
Prerequisite: FST 115, FST 117, FST 120, FST 220, FST 301, FST 307. Focuses on highly specialized and complex technical issues the company officer must confront. Presents the inner workings and dynamics of a typical fire service organization. Involves decision making matrix process that embraces administrative functions and strategic planning of a mid-level company officer. Prepares the company officer in the management of multi-unit response operations; water supply, staging, safety, division/sector, exposure protection and unified command functions. Credit may be earned in FST 280 or the combination of FST 202 and 208 but not in both. (60-0)

**FST 290-299      Special Projects in Fire Science Technology**

**FST 300      Fire Officer III 3 Sem Hrs**  
Provides basic leadership skills for personal, company and supervisory success. Includes health and safety risk management, program implementation, and incident management system. Credit may be earned in either FST 300 or FST 302, 303, 304, and 305 combined. (45-0)

**FST 301      Incident Command System 1 Sem Hr**  
Focuses on the fire officer's and manager's responsibilities to use, deploy, implement, and/or function within a department Incident Command System. (15-0)

**FST 302 Leadership I Strategies for Company Success 1 Sem Hr**

Presents the basic leadership skills and tools needed to perform effectively in the fire service environment. Includes techniques and approaches to problem solving, ways to identify and assess the needs of the company officer's subordinates, methods for running meetings effectively, and decision-making skills. Credit may be earned in either FST 300 or FST 302, 303, 304, and 305 combined. (15-0)

**FST 303 Leadership II Strategies for Personal Success 1 Sem Hr**

Provides the basic leadership skills and tools needed to perform effectively in the fire service environment. Includes ethics, use and abuse of power, creativity, and management of the multiple roles of a leader. Credit may be earned in either FST 300 or FST 302, 303, 304, and 305 combined. (15-0)

**FST 304 Leadership III Strategies for Supervisory Success 1 Sem Hr**

Provides the various leadership skills and tools to perform effectively in the fire service environment. Includes delegation to subordinates, assessment of personal leadership styles through situational leadership, discipline, coaching and motivating techniques. Credit may be earned in either FST 300 or FST 302, 303, 304, and 305 combined. (15-0)

**FST 305 Firefighter Health and Safety: Program Implementation & Management 1 Sem Hr**

Focuses on the problem of firefighter health and safety, and the design and implementation of a departmental safety program. Includes command issues, policies and programs addressing health and safety in emergency situations. Credit may be earned in either FST 300 or FST 302, 303, 304 and 305 combined. (15-0)

**FST 306 Shaping the Future 1 Sem Hr**

Focuses on the skills and techniques that a mid-level manager needs to provide leadership and direction in the fire service. Includes discussions on the use of environmental scanning as a tool, the concepts of paradigm shifts, and methods to reframe problems accurately. (15-0)

**FST 307 Incident Safety Officer 1 Sem Hr**

Focuses on the increasing awareness to a wide variety of emergency situations. Teaches what a safety officer at an incident needs to know using scenarios to convey instructional points. (15-0)

**FST 308 Health and Safety Officer 1 Sem Hr**

Examines the role of the Health and Safety Officer in policy and procedure issues that affect the health and safety of emergency responders; emphasizes risk analysis, wellness, program management, and other occupational safety issues. (15-0)

**FST 332 Advanced Fire Administration 3 Sem Hrs**

Examines the organization and management of the fire service. Discusses new technologies, deployment of resources available, personnel and equipment costs, municipal fire protection planning, statistics and reporting systems, training and finances. (45-0)

**FST 334 Fire Prevention Organization & Management 4 Sem Hrs**

Presents an overview of history, philosophy, techniques, procedures, programs of private and public agencies involved with fire prevention, organization and administration of code enforcement, licenses, permits, zoning, inspections, investigations, education and analysis of statistics. Includes off site field trips. (45-15)

**FST 338 Contemporary Issues In The Fire Service 3 Sem Hrs**

Examines issues having impact on the fire service to include past, present and future concerns and trends. Discusses current political, policies, practices, deployment and events within the fire service and related professions and technologies. (45-0)

## German

**GE 111 German One 4 Sem Hrs**

Acquisition of proper pronunciation, basic grammatical structures and vocabulary of modern spoken and written German by means of oral practice, reading or simple texts, and written exercises. (60-0)

**GE 112 German Two 4 Sem Hrs**

Prerequisite: GE 111 or one year of high school German. A continuation of GE 111. (60-0)

**GE 211 German Three 4 Sem Hrs**

Prerequisites: GE 111 and GE 112. Applies the important grammar rules that have been used and practiced in German One and German Two. Reviews in depth the context of conversation exercises, reading excerpts of contemporary original literary and journalistic pieces. Exposes students to the living spoken and written language to develop a feeling for the language, which is quite necessary for such a complicated language as German. (60-0)

**GE 212 German Four 4 Sem Hrs**

Prerequisites: GE 111, GE 112 and GE 211. Applies the important grammar rules that have been used and practiced in German One, Two, and Three. Reviews in depth the context of conversation exercises, reading excerpts of contemporary original literary and journalistic pieces. Provides exposure to the living, spoken and written language to develop a feeling for the language. (60-0)

**GE 290-299 Special Projects in German**

## Geography

**GEO 103 Introduction To Meteorology 4 Sem Hrs**

Prerequisite: MATH LEVEL 3. Provides study of the fundamentals of weather including the underlying physical processes of the atmosphere, general circulation, weather patterns, and severe weather events. Develops an understanding of weather map analysis and forecasting. Uses extensive laboratory applications related to atmospheric study including graphing, drawing isopleths, data analysis, and access to real-time weather information. (45-15)

**GEO 111 Physical Geography 4 Sem Hrs**

Studies the natural environment which is important to people and their activities; introduction to maps and physical features; earth-sun-moon relationships; earth materials, land forms; drainage; and major natural resources. Introduces weather and climate, soils and vegetation -- their character, causes, significance and distribution. (45-30)

**GEO 113 World Cultural Geography 4 Sem Hrs**

Examines essential geographic characteristics and concepts of selected cultural regions of the world. Compares and contrasts these regions in terms of their present and potential development using examples from both the western and non-western world. (60-0)

**GEO 116 Professional Global Awareness 1 Sem Hr**

Heightens awareness of cross-cultural understandings. Develops strategies in building business relationships in the global market. (15-0)

**GEO 222 Geography of Asia 3 Sem Hrs**

Regional geographic interpretation of the area as a continent. Study of relationships of physical, economic, social and political environment activity. (45-0)

**GEO 223 Geography of Europe 3 Sem Hrs**

Similar to Geography 222 but applied to Europe. (45-0)

**GEO 226 Geography of United States and Canada 3 Sem Hrs**

Similar to Geography 222 but applied to the United States and Canada. (45-0)

**GEO 255 Third World Development 4 Sem Hrs**

Using a multidisciplinary approach, describes and analyzes processes and conditions which created and maintain the "Third World." Addresses population, physical environment, historical, political, social and economic factors. Explores and applies current concepts and development theories. Credit may be earned in GEO 255 or SOC 265, but not in both. (60-0)

**GEO 260 Geography of the Pacific Islands 3 Sem Hrs**

Prerequisite: Permission of the instructor. A regional geographic interpretation of the Pacific Islands emphasizing their physical, environmental and cultural patterns, and their economic development. Study will focus on three subregions: Polynesia, Melanesia and Micronesia. Field work in the Pacific Islands will be required. Students must pay own expenses. (45-0)

**GEO 261 Geography of Caves & Karst Topography 1 Sem Hr**

Study focuses on the role of solution in forming caves and in landscape formation (karst topography). Formation of stalactites, stalagmites, flowstones and other crystal formations are also studied. Students are required to participate in weekend field trip to Mammoth Cave National Park, Kentucky. Students must pay own expenses. (15-0)

**GEO 262 The Geography of the Canadian Shield 1 Sem Hr**

Focuses on the interrelationships between humans and the physical environment of this, the largest of the landform provinces of Canada. Major topics include the physical environment, natural resources, recreation, and settlement patterns. Required classroom work, travel and field research will help the students to develop their understanding of this wilderness area. Student must pay own expenses for field trip. (15-0)

**GEO 267 Geography of Continental Glaciation 1 Sem Hr**

Reviews the causes and consequences of continental glaciation. Topics include climatic change, past and present distribution of continental glaciers and landscape features formed by glaciation. The possibility of the world entering another "Ice Age", will also be discussed along with what social modifications might be necessary if this should happen. Field work in a glaciated area will be included. Students must pay own expenses. (15-0)

**GEO 268 International Studies In Geography 1-4 Sem Hrs**

Provides a geographic interpretation of selected world regions. Emphasis on the region's physical and cultural environments. Includes class lectures, individual consultation, and international field study. Expenses for the field study are the responsibility of the student (15-60,0)

**GEO 290-299 Special Projects in Geography**

## Geology

**GLG 102 Volcanoes and Earthquakes 1 Sem Hr**

A study of the internal dynamics of the earth. Major topics will include: catastrophic events in historic times, products of vulcanism, volcanic rocks, vulcanism and geothermal energy, relationship to earthquakes and volcanoes to plate tectonics, interpretation of earthquake records, man-made earthquakes, earthquake prediction and control. (15-0)

**GLG 111 Physical Geology 4 Sem Hrs**

Study of the overall structure of the earth and the rocks which form the crust. An introduction to the processes of erosion and weathering caused by the work of natural agents such as water and ice. Discussion of Plate Tectonic Theory and implications. Laboratory study of common rocks, minerals and selected fossils. Field trips optional. (45-30)

**GLG 112 Evolution of the Earth 4 Sem Hrs**

Prerequisite: GLG 111. Study of the history of the Earth as recorded in rocks. Description of continental structural development in terms of plate tectonics using North America as the principal example. Origin and evolution of life. Laboratory work includes studies of invertebrate fossils and geologic map interpretation. Field trips optional. Formerly called Historical Geology. (45-30) (Odd numbered years only)

**GLG 115 Introduction to Oceanography 4 Sem Hrs**

Explores how the ocean stabilizes the Earth's surface environment. Includes global temperature distributions, El Nino events, ozone depletion, and global warming. Considers the origins and evolution of the ocean basins, currents, circulation patterns, and physical and chemical properties of seawater. Investigates the impact of humans on the marine environment, including shoreline changes, pollution effects, and extraction of natural resources. May include optional field trip to view shoreline features of the Great Lakes. (45-30)

**GLG 118 Geology and Dinosaurs 4 Sem Hrs**

Designed for non-science as well as science majors who are interested in the basic principles of geology and in the study of dinosaurs. Introduces the student to the physical earth, its rocks, minerals, and external processes. Examines the theory of Plate Tectonics and the changing shape of the continents during the time of dinosaurs. Investigates the concepts of geologic time, evolution, and fossilization as related to the study of dinosaurs. Reviews new and controversial theories, including dinosaur extinction, metabolism, and behavior. Optional field trip to view museum specimens. Credit may be earned for GLG 117 or GLG 118 but not both. (45-30)

**GLG 119 Introduction to Field Paleontology 3 Sem Hrs**

Introduces basic skills and techniques of the field paleontologist. Reviews the history and development of field paleontology. Emphasizes where to locate various fossils and the likelihood of preservation. Teaches proper documentation skills and other methods of recording fossil finds. Covers the use of plaster casts, glues, and extraction tools practiced in a field setting. Field trip required. Students must pay own expenses. (45-0)

**GLG 122 Geology of Michigan 3 Sem Hrs**

An interpretation of the origin and characteristics of the principal geological features of Michigan through the application of basic geological principles. Includes some identification of rocks, minerals and fossils. Occasional field trips. (45-0)

**GLG 123 Geology of the Great Lakes Area 2 Sem Hrs**

An interpretation of the principal geological features of the Great Lakes region through the application of basic geological principles. Includes some identification of rocks, minerals, and fossils. Field trip required. Students must pay own expenses. (30-0)

**GLG 125 Geology of the National Parks 3 Sem Hrs**

A study of the origin of geologic features of selected national parks. Includes an analysis of rocks, minerals, fossils, and physical landscapes as well as the geologic history of varied regions of the United States. Interpretation of topographic and geologic maps of selected areas. (45-0)

**GLG 130 Environmental Geology 4 Sem Hrs**

Introduces geology as it relates to human activities, and is designed for both non-science majors and students interested in an environmental career. Emphasizes geologic hazards, including earthquakes, volcanic eruptions, flooding, mass movements, and pollution of water and soil resources. Examines waste disposal along with related topics in medical geology and environmental law. Optional field trip(s) to waste disposal sites and/or remediation sites. (45-30)

**GLG 230 Introductory Field Methods in Hydrogeology 2 Sem Hrs**

Prerequisite: Successful completion (grade of "C" or better) in GLG 111, or GLG 130, or BIO 110. Introduces the field techniques used in environmental site assessment, ground water monitoring, and ground water testing. Includes soil water sampling, ground water sampling, water quality testing, and water level recording. Explores topics of geophysical surveying, water well installation, piezometer installation and techniques to determine the direction of ground water flow. (15-45)

**GLG 262A Geology of Mackinac Island 1 Sem Hr**

Studies the bedrock geology and glacial features of Mackinac Island and surrounding areas, including Tahquamenon Falls. Weekend field trip required with students paying their own expenses. (15-0)

**GLG 262B Geology of Pictured Rocks 1 Sem Hr**  
Studies the bedrock geology and geologic setting of Pictured Rocks National Lakeshore, including surrounding rocks and water falls. Weekend field trip is required with student paying their own expenses. (15-0)

**GLG 262 Geology of the Canadian Shield 1 Sem Hr**  
Studies the geologic and geographic features of the Lake Superior region of Canada. Includes topics such as rock types, origin of landscape features, physical environments, natural resources, and relationships of humans with the environment. Weekend field trip required with students paying their own expenses. (15-0)

**GLG 266 Geology of the Grand Canyon 2 Sem Hrs**  
Prerequisite: Permission of Instructor. A study of the origin and distribution of the geologic features of the Grand Canyon of Arizona. Major topics include rock types, origin of landscape features, geologic history of the Grand Canyon, and human impact of the environment. Field work in the Grand Canyon is required. Students must pay own expenses. (30-0)

**GLG 267 Geology of Northern Lower Michigan 1 Sem Hr**  
Studies the rocks and glaciated features of the lower peninsula of Michigan. Includes rock types, origin of landscape features, and studies of the exposed bedrock geology. Weekend field trip required with students paying own expenses. (15-0)

**GLG 268 International Studies in Geology 1-4 Sem Hrs**  
Provides a geologic interpretation of selected world regions. Emphasis on physical environments, natural geologic processes, and geologic history of the study area. Includes class lectures, individual consultation, and international field study. Expenses for the field study are the responsibility of the student. (15-60,0)

**GLG 290-299 Special Projects in Geology**

## History

**HIS 111C A Survey of Early Western Civilization 4 Sem Hrs**  
Requires enrollment in a learning community. Studies political, social, economic and cultural history of Europe from prehistoric times through the 1500's. Gives particular attention to civilizations and their relevant contributions to the modern world. Credit may be earned in only one of HIS 111, HIS 111CW, or HIS 111H. (60-0)

**HIS 111H A Survey of Early Western Civilization - Honors 4 Sem Hrs**  
Prerequisites: LEVEL 5 READING and LEVEL 3 WRITING and permission of the Honors Office. Studies political, social, economic and cultural history of Europe from prehistoric times through the 1500's. Gives particular attention to civilizations and their relevant contributions to the modern world. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in HIS 111 or HIS 111H but not in both. (60-0)

**HIS 111 A Survey of Early Western Civilization 4 Sem Hrs**  
Prerequisites: LEVEL 5 READING or LEVEL 3 WRITING. Studies political, social, economic and cultural history of Europe from prehistoric times through the 1500's. Gives particular attention to civilizations and their relevant contributions to the modern world. Credit may be earned in HIS 111 or HIS 111H but not both. (60-0)

**HIS 112H A Survey of Later Western Civilization - Honors 4 Sem Hrs**  
Prerequisites: LEVEL 5 READING and LEVEL 3 WRITING and permission of the Honors Office. HIS 111 recommended. Studies political, social, economic, and cultural history of Europe from the 1600s to the present time. Gives particular attention to cultural and democratic movements and their influence on current history. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in only one of HIS 112, HIS 112H, HIS 111 or HIS 111H. (60-0)

**HIS 112 A Survey of Later Western Civilization 4 Sem Hrs**  
Prerequisites: LEVEL 5 READING or LEVEL 3 WRITING. HIS 111 recommended. Studies political, social, economic, and cultural history of Europe from the 1600s to the present time. Gives particular attention to cultural and democratic movements and their influence on current history. Credit may be earned in HIS 112 or HIS 112H but not both. (60-0)

**HIS 214 Early African-American History Pre-European Africa to 1877 3 Sem Hrs**  
Prerequisites: READING LEVEL 5 or WRITING LEVEL 3. Examines the transition of Africans to Afro-Americans, the Americanized institution of slavery, the development of the Afro-American community, and its impact on the culture and society of the new world. Also examines Afro-American resistance to slavery, free Afro-Americans, and the participation of the Afro-American community in the Civil War and Reconstruction. (45-0)

**HIS 215 Recent African-American History: Since 1850 3 Sem Hrs**  
Prerequisites: READING LEVEL 5 or WRITING LEVEL 3. Focuses on the ideological, strategic and demographic changes and conflicts of Afro-Americans since emancipation, with special emphasis on legal and extra-legal terror and the many social movements including Bookerism, Garveyism, Pan-Africanism, "The King Years" (specifically 1955-1968), and the post-King era. Examines emerging Africa, new-racism, and the diversity within the current Afro-American community. (45-0)

**HIS 217 Hispanics in the U.S. 3 Sem Hrs**  
Prerequisites: READING LEVEL 5 or WRITING LEVEL 3. Surveys the social, cultural, economic and political history of Hispanic Americans (Spanish-speaking), which includes groups such as Mexican-Americans, Cuban-Americans and Puerto Rican-Americans, with emphasis on Mexican-Americans. Analyzes the present status of different Hispanic groups and the problems that minority groups encounter in American society. (45-0)

**HIS 221 Early American History 3 Sem Hrs**  
Prerequisites: LEVEL 5 READING or LEVEL 3 WRITING. Introduces American history from its immediate European background through the Civil War Era. Emphasizes the growth of institutions and ideas. Also examines the political, economic, and social experiences of the young Republic, and their influence on contemporary America. (45-0)

**HIS 222C Recent American History 3 Sem Hrs**  
Requires enrollment in a learning community. Surveys modern America from the Gilded Age to the present emphasizing the formation of American character traits. Examines topics such as the frontier, abundance, growth of government and regulation, the Depressions, and the Cold War for their influence upon the development of the American individual. Credit may be earned in HIS 222W or HIS 222CW, but not both. (45-0)

**HIS 222 Recent American History 3 Sem Hrs**  
Prerequisites: LEVEL 5 READING or LEVEL 3 WRITING. Surveys modern America from the Gilded Age to the present emphasizing the formation of American character traits. Examines topics such as the frontier, abundance, growth of government and regulation, the Depressions, and the Cold War for their influence upon the development of the American individual. (45-0)

**HIS 225 History of Women and Gender in the West 3 Sem Hrs**  
Prerequisites: READING LEVEL 5 or WRITING LEVEL 3. Surveys the role of gender in the west from the beginning of civilization to the present. Explores theories of masculinity and femininity, the history of gender roles and the relationship of these beliefs and practices to the economy, politics, and cultural expressions of the west. (45-0)

**HIS 236 History of Michigan 2 Sem Hrs**  
Prerequisites: LEVEL 5 READING or LEVEL 3 WRITING. Explores the history of Michigan from the time of the first known human inhabitants, through the periods of French and British settlement and U.S. acquisition. Emphasizes the study of Michigan history through the periods of territorial status, statehood and industrial growth. Directs attention toward the Saginaw Valley and its relationship to a developing Michigan. Credit may be earned in one of the following HIS 113, HIS 114, HIS 236, or HIS 237. (30-0)

**HIS 237 History of Michigan/With Project 3 Sem Hrs**  
Prerequisites: LEVEL 5 READING or LEVEL 3 WRITING. Explores the history of Michigan from the time of the first known human inhabitants, through the periods of French and British settlement and U.S. acquisition. Emphasizes the study of Michigan history through the periods of territorial status, statehood and industrial growth. Directs attention toward the Saginaw Valley and its relationship to a developing Michigan. Includes a major paper or project. Credit may be earned in one of the following HIS 113, HIS 114, HIS 236 [or HIS 236W] or HIS 237 [or HIS 237W]. (45-0)

**HIS 268 International Studies in History 1-4 Sem Hrs**  
The student will do an in-depth historical study in one or more aspects of the history of the country other than the United States. Overseas study is an integral part of the course. Expenses for travel and overseas study must be borne by the student. (60-0)

**HIS 290-299 Special Projects in History**

## Health Science

**HSC 105 Medical Terminology 2 Sem Hrs**  
Develops a basic understanding of the spelling and meaning of commonly used prefixes, suffixes, and word roots, and their combining forms. Comprehension of these word parts will allow proper use of words for the development of professional language use in the allied health professions. (30-0)

**HSC 140 Basic Medical Emergencies 2 Sem Hrs**  
Provides the background necessary to respond to basic emergency situations in the clinical setting. Includes respiratory, cardiac, neurological, and diabetic emergencies. Cardiopulmonary resuscitation certification requirements must be met for successful completion of course. (30-0)

**HSC 205 Legal Aspects of the Health Care System 2 Sem Hrs**  
An overview of state legislation affecting various aspects of the health care system, including study of common legal problems, etc., such as dispensing of medication and privacy of medical records. Designed primarily for health care professionals. (30-0)

**HSC 210 Medical Office Pharmacology 1 Sem Hr**  
Prerequisites: HSC 105 and one of the following: BIO 101, BIO 131, BIO 132, BIO 140, BIO 152, BIO 153, BIO 160, or BIO 240, both with a minimum grade of "C" (2.0). Presents the necessary information to comply with the federal laws regarding accurate and secure drug records and the interpretation of prescriptions and communication of medication orders to other professionals. Credit may be earned in MA 205 or HSC 210 but not in both. (15-0)

**HSC 290-299 Special Projects in Health Science**

## Interior Design

**ID 100 Introduction to Interior Design 3 Sem Hrs**  
Covers the aims, principles, and means of design. Explores light and color thoroughly including color theory and color planning. Analyzes home planning in relation to activities, space, and equipment. Studies enrichment of space through the use of accessories, plants, paintings, prints, and sculpture. Introduces lighting, heating, ventilation, and acoustics. (45-0)

**ID 170 Design Elements 4 Sem Hrs**  
Prerequisites: ID 100 and MGT 110. Studies appropriate treatment and materials for windows, walls, and floor coverings. Places emphasis on current treatment trends and the process of measuring and translating measurement accurately in material needs and cost estimates. Uses field trips, guest speakers, and practical experiences. (60-0)

**ID 200 Spatial Analysis and Presentation 3 Sem Hrs**  
Prerequisite: ARC 105 and ID 100. (Recommended that ID 200 and ID 210 be taken concurrently). Emphasis will be placed on the analysis of spatial arrangement and the relationship it has to adjacent space and accepted standards. CAD and basic drawing methods will be utilized and standard building blueprints will be studied. Students will conduct presentations of floor plan arrangements, interior elevations, and interior perspectives. Familiarization with micro computers required or permission of instructor. Credit may be earned in ID 200 or ARC 200 but not in both. (45-0)

**ID 210 Furniture 3 Sem Hrs**  
(Recommended that ID 200 and ID 210 be taken concurrently). A study of furniture as an essential element in interior design. Major furniture styles will be covered from a historical perspective with applications to present uses. The manufacture of both case and upholstered goods for the purpose of learning construction details, order, placement and delivery cycle, and the cost to quality relationship will be included. (45-0)

**ID 230 Applied Interior Design 3 Sem Hrs**  
Prerequisite: ID 100, ID 170, ID 200, and ID 210. Deals with special problem areas in interior decoration. Work with clients, teaches how to interview and determine needs and wants and translate the information into practical decorating solutions, including shopping for appropriate floor and wall coverings, furniture, window treatment and accessories. Works with an actual client family, given an established budget, to prepare and give appropriate oral and visual presentations to the client. (45-0)

**ID 240 Contract/Commercial Design I 2 Sem Hrs**  
Prerequisite: ID 100, ID 200 or permission of instructor. Studies materials used, equipment necessary, and furniture available in the field of contract/commercial design. Discusses legal requirements for commercial, institutional and other public spaces. Emphasizes student presentation. (30-0)

**ID 241 Contract/Commercial Design II 2 Sem Hrs**  
Prerequisite: ID 240 and permission of instructor. Applies contract/commercial elements utilizing actual space project examples. Stresses contract design within legal boundaries. Completes project examples in commercial offices, institutional work sites and other public environments. Emphasizes student presentations. (30-0)

**ID 245 Design Trends 2 Sem Hrs**  
Prerequisites: ID 241, ID 230 or concurrently. Study of current trends in furniture, accessories, textiles, and lighting. Student presentation, guest speakers and field trips will be emphasized. This is a "capstone" course recommended to be taken concurrently with ID 230. (30-0)

**ID 290-299 Special Projects in Interior Design**

## Interdisciplinary Humanities

- IHU 101 Humanities Through the Arts 3 Sem Hrs**  
A survey of the human condition as seen through film, dramas, music, literature, painting, sculpture, and architecture with an emphasis on the history, techniques, meaning, and evaluation of individual works of western art. (45-0)
- IHU 110 Introduction to Genealogy 1 Sem Hr**  
Introduces and broadly examines genealogy from an interdisciplinary perspective. Examines family and ethnic history and pursues family history for personal and professional growth. Covers research methods, record keeping, and problem solving. Emphasizes the use of archival and printed sources, and the Internet. Credit may earned in IHU 110 or SSI 110 but not in both. (15-0)
- IHU 161 Projects in Cross-Cultural Learning 1 Sem Hr**  
Assign student volunteers to either community agencies providing cross-cultural experiences or to an international work experience. Supportive seminars will provide both structure and background knowledge of the particular country involved. (A minimum of 30 hours volunteer placement is required). Credit may be earned in IHU 161 or SOC 161, but not both. (15-30)
- IHU 162 Projects in Cross-Cultural Learning 2 Sem Hrs**  
Assign student volunteers to either community agencies providing cross-cultural experiences or to an international work experience. Supportive seminars will provide both structure and background knowledge of the particular country involved. (A minimum of 60 hours volunteer placement is required.) Credit may be earned in IHU 162 or SOC 162, but not both. (15-60)
- IHU 201H Honors Colloquy 3 Sem Hrs**  
Prerequisite: LEVEL 5 READING and LEVEL 3 WRITING and permission of Honors office. Required of all Honors students. Explores the elements of critical and creative thinking. Emphasizes relationships among thinking, writing, and productive interaction with others, as well as the interdisciplinary nature of truth and knowledge. Includes project and/or research writing at instructor's discretion. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in LIT 201H or IHU 201H but not both. (45-0)
- IHU 202 Women's Studies 3 Sem Hrs**  
Introduces the academic field of women's studies. Explores the diversity of women's experiences and achievements both in the present and in the past from a variety of interdisciplinary perspectives. Addresses social structures and the intersections of gender, class, race, ethnicity, religion, ages, abilities, and sexual identities. (45-0)
- IHU 210 Death and Dying 3 Sem Hrs**  
Prerequisite: ENG 111, ENG 111A or permission of instructor. Studies attitudes, practices, beliefs, theories, institutions of death and dying in contemporary, historical western and also some non-western societies. Addresses issues of pain management, doctor-assisted suicide, quality versus quantity of life, organ donation, bereavement, the funeral industry, living wills and durable powers of attorney. (45-0)
- IHU 226 Introduction to Film 3 Sem Hrs**  
Prerequisite: Any approved College Composition I course with a minimum grade of C or permission of instructor. Follows the creation of a film from the original idea to final production. Examines film as a mode of popular entertainment and as an art form. Focuses on identifying the media's components and developing the viewers' standards of appreciation. Credit may be earned in IHU 226 or LIT 226, but not in both. (45-0)

- IHU 232 Exploring Human Nature 3 Sem Hrs**  
Prerequisite: READING LEVEL 6 or READING LEVEL 6B and WRITING LEVEL 4 or WRITING LEVEL 4B. Explores the question "What does it mean to be human?" from interdisciplinary perspectives. Identifies and discusses the relative importance of traits and characteristics that "make us human." Examines and evaluates major traditional and contemporary views of human nature and introduces alternative ways of understanding the self in relation to nature, society, religion, and the state. Credit may be earned in only one of IHU 232, SSI 232, or PSY 232. (45-0)
- IHU 234 World Religions 4 Sem Hrs**  
Prerequisites: READING LEVEL 3 or WRITING LEVEL 3. Introduces religion and the primary "living" religions of the world. Examines the principles and functions of religion, the origins and cultures of the world's major religions, and their beliefs and primary ritual practices. Discusses and critically examines how religious belief systems and practices influence the thoughts and behaviors of adherents in everyday life. Credit may be earned in SSI 234 or IHU 234 but not in both. (60-0)
- IHU 261 Contemporary Art in Chicago 2 Sem Hrs**  
Surveys contemporary art forms, processes, and ideas of the international art market in a 3-day visit to Chicago which will include the International Art Fair, the Chicago Art Institute and the Contemporary Museum of Art. Students pay tuition plus all of their expenses. (30-0)
- IHU 267 Producing A Student Publication 3 Sem Hrs**  
Prerequisite: ENG 253 or ENG 254 or ENG 256. Provides a guided opportunity to learn about publishing by compiling, selecting, editing, and designing an annual publication of student writing, photography, and artwork. Focuses on hands-on experience in critical reading, writing, and thinking; editing; layout; production details; marketing; design; and distribution. Credit may be earned in IHU 216 or IHU 267 but not both. Credit may also be earned in ART 267 but not in the same semester. (60-90)
- IHU 268 International Studies in Interdisciplinary Humanities 1-4 Sem Hrs**  
The student will do an in-depth study in one or more aspects of the culture, language, and history of Hawaii. Overseas study is an integral part of the course. Expenses for travel and overseas study must be borne by the student. (15-60 lecture)
- IHU 280 Exploring Diversity 2 Sem Hrs**  
Prerequisites: Level 3 Reading and Level 3 Writing. Provides a foundation in knowledge and application of issues and principles surrounding diversity. Provides an opportunity to explore, reflect and practice an interdisciplinary approach to the study of diversity. Credit may be earned in only one of the following: SSI 288, SSI 289, ED 388, ED 389, IHU 280 or IHU 281. (30-0)
- IHU 281H Exploring Diversity with project - Honors 3 Sem Hrs**  
Prerequisites: LEVEL 5 READING and LEVEL 3 WRITING and permission of the Honors Office. Provides a foundation in knowledge and application of issues and principles surrounding diversity. Provides an opportunity to explore, reflect and practice an interdisciplinary approach to the study of diversity. Includes completion of project. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in only one of the following: SSI 288, SSI 289, ED 388, ED 389, IHU 280 or IHU 281. (45-0)
- IHU 281 Exploring Diversity/With Project 3 Sem Hrs**  
Prerequisites: Level 3 Reading and Level 3 Writing. Provides a foundation in knowledge and application of issues and principles surrounding diversity. Provides an opportunity to explore, reflect and practice an interdisciplinary approach to the study of diversity. Includes completion of project. Credit may be earned in only one of the following: SSI 288, SSI 289, ED 388, ED 389, IHU 280 or IHU 281. (45-0)

**IHU 282H Seminar in Social Issues - Honors 3 Sem Hrs**  
Prerequisite: READING LEVEL 5 or 5B and WRITING LEVEL 4 or 4B and permission of Honors office. An integrated study involving exploration and development of critical thinking, analysis and problem-solving skills with an interdisciplinary approach focusing on a selected social issue. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in IHU 282H or SOC 282H, but not both. (45-0)

**IHU 289 New Media 3 Sem Hrs**  
Prerequisites: ART 111, ART 115, ART 116. Prerequisites may be waived following portfolio review by instructor. Provides a lecture/discussion style format in combination with studio work time to explore new art forms from mid 20th century to current times. Credit may be earned in IHU 289 or ART 289 but not in both. (30-60)

**IHU 290-299 Special Projects in Interdisciplinary Humanities**

## Industrial Technology Education

**ITE 290-299 Special Projects in Industrial Technology Education**

**ITE 330 Careers and Technology for Children 3 Sem Hrs**  
Prerequisite: ED 200B or Permission of Instructor. Covers how to teach students career awareness, exploration, and preparation. Creates teaching materials using industrial tools, processes and supplies with a focus on 7-12 grade students. (45-0)

**ITE 340 Teaching Methods and Strategies in Industrial/Technical Education 3 Sem Hrs**  
Prerequisite: ED 200B or Permission of Instructor. Surveys local, state, and national standards for teaching industrial technology. Considers current and historic philosophies, methods and trends. (45-0)

**ITE 350 Curriculum Development and Facility Planning in Industrial/Technical Education 3 Sem Hrs**  
Prerequisite: ED 200B or Permission of Instructor. Develop course, program, and curriculum materials. Specify materials, tools, machines, and facilities for industrial technology education. (45-0)

## Leisure Activity

**LEA 149 Golf I 1 Sem Hr**  
Introduces the fundamentals of the full swing, the short game, and putting, along with the rules and courtesies of the game. Utilizes a public golf course for play, requiring an additional fee. Credit may be earned in LW 149 or LEA 149, but not in both. (0-30)

**LEA 168 Ballet II 1 Sem Hr**  
Continues and further develops the basic movements introduced in Ballet I with emphasis on combinations of movements (enchainments) to develop concentration, balance and speed. Credit may be earned in LW 168 or LEA 168 but not in both. (0-30)

**LEA 188 Skiing I 1 Sem Hr**  
Introduces the fundamental skills of skiing including the gliding wedge, wedge turn, traversing and stem turn. Students must furnish or rent equipment and pay skiing charges. Credit may be earned in LW 188 or LEA 188 but not in both. (0-30)

**LEA 189 Skiing II 1 Sem Hr**  
Emphasizes the transition from steered turn to sliding turn. Includes side slipping, uphill christie, and stem christie. Credit may be earned in LW 189 or LEA 189 but not in both. (0-30)

**LEA 190 Skiing III 1 Sem Hr**  
Prerequisite: LEA 189 or equivalent skill level. Student will learn the finer points of parallel skiing. Parallel christie, parallel with check, and short swing will be taught. Student must furnish or rent equipment and pay skiing charges. Credit may be earned in LW 190 or in LEA 190 but not in both. (0-30)

**LEA 194 Snowboarding 1 Sem Hr**  
Introduces the fundamentals of snowboarding including the basics of skating, climbing, gliding, and turning. Credit may be earned in LW 194 or LEA 194 but not in both. (0-30)

**LEA 290-299 Special Projects in Leisure Activity**

## Library Skills

**LIB 195 Library Research Skills 2 Sem Hrs**  
Prerequisites: Reading Level 3. Develops information literacy for success with college-level academic research. Credit may be earned in LIB 195W or ENG 195W but not in both. (30-0)

**LIB 290-299 Special Projects in Library Skills Sem Hr**

## Literature

**LIT 201H Honors Colloquy 3 Sem Hrs**  
Prerequisite: READING LEVEL 5 and WRITING LEVEL 3 and permission of the Honors Office. Required of all Honors students. Explores the elements of critical and creative thinking. Emphasizes relationships among thinking, writing, and productive interaction with others, as well as the interdisciplinary nature of truth and knowledge. Includes project and/or research writing at instructor's discretion. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in LIT 201H or IHU 201H but not both. (45-0)

**LIT 219 Literary Analysis 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Surveys and practices methods of literary interpretation and appreciation, from the close reading strategies of New Criticism to the contemporary considerations of reader-response theory. Interpretive papers on particular works of fiction, poetry and drama are required. (45-0)

**LIT 220 Readings In Poetry 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Studies the background, developments, and the current state of modern poetry. Emphasizes poetry by American and British authors. (45-0)

**LIT 221 Readings in the Short Story 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. The student will read selected short stories of British, American, and other authors in addition to increasing one's understanding of this relatively modern form, the student will explore ways in which the short story is personally meaningful in depicting our perception of ourselves and the world in which we live. (45-0)

**LIT 222 Readings in the Novel 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. From a reading of selected novels the student will develop understanding of the novel form. The student will also learn how to derive personal meaning and satisfaction from novels chosen from different times, places, and cultures. (45-0)

**LIT 223 Readings in Drama 3 Sem Hrs**  
Prerequisite: READING LEVEL 7 or instructor permission. Studies historical and popular American, British and other plays. Examines the effects of drama on both American, British and other cultures. (45-0)

**LIT 224H Literary Festival - Honors 3 Sem Hrs**  
Prerequisite: READING LEVEL 7 or permission of instructor and permission of the Honors Office. Examines a body of literature organized by the selection of material either from the works of one author, genre, or topic, or a combination thereof. (e.g. science fiction, war novel, thrillers, horror, etc.) Course content to be announced each semester prior to registration. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in either LIT 224 or LIT 224H but not in both. (45-0)

**LIT 224 Literary Festival 3 Sem Hrs**  
Prerequisite: READING LEVEL 7 or permission of instructor. Examines a body of literature organized by the selection of material either from the works of one author, genre, or topic, or a combination thereof. (e.g. science fiction, war novel, thrillers, horror, etc.) Course content to be announced each semester prior to registration. Credit may be earned in LIT 224 or LIT 224H but not in both. (45-0)

**LIT 226 Introduction to Film 3 Sem Hrs**  
Prerequisite: Any approved College Composition I course with a minimum grade of C or permission of instructor. Follows the creation of a film from the original idea to final production. Examines film as a mode of popular entertainment and as an art form. Focuses on identifying the media's components and developing the viewers' standards of appreciation. Credit may be earned in LIT 226 or IHU 226 but not in both. (45-0)

**LIT 227C The American Motion Picture 3 Sem Hrs**  
Prerequisite: READING LEVEL 5 and WRITING LEVEL 3. Concurrent enrollment in ENG 111 or ENG 112 in a coordinated learning community. Studies popular films, with major emphasis on American culture as reflected in the motion picture. Examines the effect of the images portrayed in motion pictures on the perception of American society and history; topics vary from semester to semester. Credit may be earned in either LIT 227 or LIT 227C, but not both. (45-0)

**LIT 227 The American Motion Picture 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Studies popular films, with major emphasis on American culture as reflected in the motion picture. Examines the effect of the images portrayed in motion pictures on the perception of American society and history; topics vary from semester to semester. (45-0)

**LIT 228H Masterpieces of World Literature: Beginning through 1600s - Honors 3 Sem Hrs**  
Prerequisite: READING LEVEL 7 or permission of instructor and permission of the Honors Office. Surveys world literature through 1600 that includes, but is not necessarily limited to, the masterpieces of the Western tradition. Concentrates on recurring themes, such as a person's relationship to God and nature, individual and social morality, liberty and responsibility, social and economic justice, and the search for a meaningful existence. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in either LIT 228 or LIT 228H, but not in both. (45-0)

**LIT 228 Masterpieces of World Literature: Beginning through 1600s 3 Sem Hrs**  
Prerequisite: READING LEVEL 7 or permission of instructor. Surveys world literature through 1600 that includes, but is not necessarily limited to, the masterpieces of the Western tradition. Concentrates on recurring themes, such as a person's relationship to God and nature, individual and social morality, liberty and responsibility, social and economic justice, and the search for a meaningful existence. Credit may be earned in LIT 228 or LIT 228H but not in both. (45-0)

**LIT 229H Masterpieces of World Literature: 1600s to the Present - Honors 3 Sem Hrs**  
Prerequisite: READING LEVEL 7 or permission of instructor and permission of the Honors Office. Surveys world literature from the 1600s to the present including but not necessarily limited to the masterpieces of the Western tradition. Concentrates on recurring themes, such as a person's relationship to God and nature, individual and social morality, liberty and responsibility, social and economic justice, and the search for a meaningful existence. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in either LIT 229W or LIT 229HW, but not in both. (45-0)

**LIT 229 Masterpieces of World Literature: 1600s to the Present 3 Sem Hrs**  
Prerequisite: READING LEVEL 7 or permission of instructor. Surveys world literature from the 1600s to the present including but not necessarily limited to the masterpieces of the Western tradition. Concentrates on recurring themes, such as a person's relationship to God and nature, individual and social morality, liberty and responsibility, social and economic justice, and the search for a meaningful existence. Credit may be earned in LIT 229 or LIT 229H (45-0)

**LIT 230 Readings in Modern Non-Fiction 3 Sem Hrs**  
Pre-requisite: READING LEVEL 7 or permission of instructor. Studies selected modern (post-1945) and contemporary non-fiction works in order to understand the variety of forms and expression which are possible. Concentrates on themes and topics which are a recurring part of the human condition. (45-0)

**LIT 241 Introduction to Mythology 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Provides an introduction to some of the concepts of mythology and the presence of these concepts in art and literature in particular. Considers the functions of mythology, the universality of the journey pattern in all myths, the nature of mythic imagery, the distinction between mythos and logos as patterns in thinking, the approaches available in examining particular myths and the application of all these dimensions in reading a given story. (45-0)

**LIT 242 Introduction to British Literature 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Provides a sampling of the work of some of the major authors in British Literature. Requires works to be read and examined for an understanding of the material, an appreciation of the literary forms and for the awareness of unifying themes that hold together a culture's conceptual framework. Enhances reading skills and aesthetic appreciation through exposure, discussion, writing and critical thinking. (45-0)

**LIT 245 Biblical Literature: Old Testament 3 Sem Hrs**  
This course will be a critical study of the literature of the Old Testament. It will treat the Old Testament Canon in its historical development, and examine both the literary styles and the changing theological and ethical ideas. (45-0)

**LIT 246 Biblical Literature: New Testament 3 Sem Hrs**  
A critical study of the literature of the New Testament with some attention given to the Inter-Testamental literature. The literature will be studied in terms of its historical development. Some attention will be given to the canonization of the New Testament, to the different literary styles and to the theological and ethical ideas. (45-0)

**LIT 251 Children's Literature 4 Sem Hrs**  
Prerequisite: READING LEVEL 7 or equivalent second level writing course. Surveys literature for children in the elementary grades. Explores quality trade books for children; presents respected writers and illustrators in various genres. Dispels commonly misconceived and generic thinking about children's literature, replacing with more perceptive criteria and reflective judgment of book selection. Results in greater knowledge, understanding, and appreciation of children's literature. (60-0)

**LIT 252 Young Adult Literature 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Explores literature written for and about young adults, defined as those students in middle or junior high and high school. Surveys quality trade books, with emphasis on top writers of the best, most engaging literature. Increases awareness of how literature speaks to young adults and engages them in language and learning experiences. Appropriate for general students of literature and those planning to enter careers in secondary education, sociology, psychology, and juvenile justice. (45-0)

**LIT 253 Literature for Preschool Children 3 Sem Hrs**  
Surveys quality fiction and nonfiction trade books for preschool children, with emphasis on top writers and illustrators of the best, most engaging literature. Increases awareness of how literature speaks to young children and engages them in language and learning experiences. (45-0)

- LIT 260 Literature and History of the Holocaust 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Introduces Holocaust studies. Covers the years 1933 to 1945, focusing on the role of perpetrators, victims, bystanders, and those involved in resistance and rescue. Uses a variety of literature that assesses how did the Holocaust happen? Who is responsible? What can we learn from this catastrophe? (45-0)
- LIT 268 International Studies in Literature 1-4 Sem Hrs**  
The student will do an in-depth study in one or more aspects of the literature or film of a country other than the United States. Includes class lectures and individual consultation. Overseas study is an integral part of the course. Expenses for travel and overseas study must be borne by the student. (60-0)
- LIT 269 Native North American Literature 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Surveys the literature of Native North Americans: poetry, short stories, novels and non-fiction, including biographies of important Indian leaders. Develops an understanding of the cultures which produced the literature. (45-0)
- LIT 271H American Literature to 1865 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Studies major movements and themes in American literature as they appear in the works of important authors from the Puritan period to and including the Age of Romanticism. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in either LIT 271W or LIT 271HW, but not in both. (45-0)
- LIT 271 American Literature to 1865 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Studies major movements and themes in American literature as they appear in the works of important authors from the Puritan period to and including the Age of Romanticism. Credit may be earned in either LIT 271W or LIT 271HW, but not in both. (45-0)
- LIT 272A American Literature since 1865 with Learning Community 3 Sem Hrs**  
Concurrent enrollment in ENG 111 or ENG 112 in a coordinated learning community. Studies major movements and themes in American Literature after the age of Romanticism through the Age of Realism and New Directions. Credit may be earned in LIT 272 or LIT 272A, but not in both. (45-0)
- LIT 272 American Literature Since 1865 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Studies major movements and themes in American Literature after the age of Romanticism through the Age of Realism and New Directions. (45-0)
- LIT 274 Mexican-American Literature 3 Sem Hrs**  
Prerequisite: READING LEVEL 7 or permission of the instructor. Studies novels, short stories, poetry and non-fiction by Mexican-Americans. Explores some cultural elements such as ethnicity, self-hood, self-definition, machismo and gender issues, religious influences, the tradition of curanderos and la llorona. Constructs an understanding of how culture (can) affect creative expression. (45-0)
- LIT 276 Contemporary American Fiction (1945 to Present) 3 Sem Hrs**  
Prerequisite: READING LEVEL 7 or permission of instructor. Studies trends, techniques, and themes in recent American novels and short stories. Requires reading, analyzing, and critiquing works of modern writers. (45-0)
- LIT 277 Early African-American Literature 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Studies American history and trends that affected African-American writers from the oral tradition to the written works. (45-0)
- LIT 278 Modern African-American Literature 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Studies current trends in both cultural and historical contexts. Examines the ways in which Modern African-American Literature is influenced by American history and how it affects the lives of African-Americans. (45-0)

- LIT 283 Literature of Mysticism 3 Sem Hrs**  
Prerequisite: READING LEVEL 7. Explores literature about mysticism, both secular and religious. Designed to help students begin an inner search for authenticity, personal integration and self-awareness. Provides a variety of possibilities for developing innate potentialities and for achieving altered states of consciousness through awareness exercises, meditation, chanting, fantasy journeys and journal writing. (45-0)
- LIT 285 Women in Literature 3 Sem Hrs**  
Discusses women as literary characters and as authors in time periods and cultures selected by instructor. Concentrates on women's perceptions of social structures, the blending of private and public spheres, and women's relationships to the world of publishing and literary criticism. Contrasts a woman-centered look at literature with more traditional, canonical approach to literature. (45-0)
- LIT 290-299 Special Projects in Literature**

## Legal Support Professional

- LSP 110 Legal Ethics and Responsibilities of the Legal Assistant 3 Sem Hrs**  
Prerequisite: READING LEVEL 5 or 5b and WRITING LEVEL 4 or 4b. Provides an overview of the various roles, responsibilities, and problems found in the Legal Support Professional program, and the legal ethics, legal terminology, and basic skills needed. Introduces legal forms and procedures, as well as computer skills and computer programs. Places substantial emphasis on the importance of legal ethics for the Legal Support Professional through study of the State Bar of Michigan Rules of Professional Conduct, the Michigan Code of Judicial Conduct, and the National Association of Legal Assistants Code of Ethics and Professional Responsibility. Addresses preparation for the CLA examination, the importance of communication skills, keeping track of deadlines, calendars, and mailing procedures. Credit may be earned in LAS 110 or LSP 110 but not in both. (45-0)
- LSP 115 Principles of Substantive Law 3 Sem Hrs**  
Prerequisite: LSP 110 or LAS 110. Introduces the dynamics of the law and legal process, including the origin and development of the law, types of law and the judicial system. Examines substantive legal subjects including contracts, torts, property, criminal and business related subjects. Emphasizes recognition of legal issues and the understanding of legal terminology. Credit may be earned in LAS 115 or LSP 115 but not in both. (45-0)
- LSP 150 Real Estate Law 2 Sem Hrs**  
Prerequisite: Legal Support Professional program or permission of instructor. Introduces the principles of real estate law. Describes the process and procedures involved in the buying and selling of real estate, mortgage loans and leasing. Examines the legal support professional's role in assisting the lawyer with preparing or evaluating surveys and legal descriptions, deeds of conveyance, title search reports, agreements, closing and leases. Credit may be earned in LAS 150 or LSP 150 but not in both. (30-0)
- LSP 210 Estate and Trust Administration 2 Sem Hrs**  
Prerequisite: Students in Legal Support Professional program or permission of instructor. Studies the administration of a decedent's estate from initial conference through the closing of an estate and the distribution of assets. Emphasizes preparation of proper probate documentation, preparation of proper tax returns including federal estate tax returns and fiduciary returns, and explanation of Michigan inheritance tax. Credit may be earned in LAS 210 or LSP 210 but not in both. (30-0)
- LSP 220 Environmental Law 2 Sem Hrs**  
Prerequisite: Students in Legal Support Professional program or permission of instructor. Surveys issues pertaining to environmental law. Emphasizes the process of integrating environmental policies into the social system, implementing environmental policies through the legal system, and accommodating environmental values with economic realities, traditional property rights, and national energy policy. Credit may be earned in LAS 220 or LSP 220 but not in both. (30-0)

**LSP 230 Civil Litigation 3 Sem Hrs**  
Prerequisite: READING LEVEL 6 or 6B and WRITING LEVEL 5 or 5B, MGT 251, and LAS 115 or LSP115 or LAS 120 or LSP 120. Studies the analysis, evaluation, and preparation of the various stages of a civil matter for litigation and trial using Michigan Rules of Civil Procedure and Rules of Evidence. Includes an efficient and systematic approach to fact investigation, drafting pleadings, discovery, and file control. Studies the pretrial stages of a lawsuit with emphasis upon trial preparation including motions in limine, witness preparation, and jury voir dire, concluding with trial and post-trial motions. Credit may be earned in LAS 125 or LSP 230 but not in both. (45-0)

**LSP 235 Criminal Law and Procedure 3 Sem Hrs**  
Prerequisite: Legal Support Professional program or permission of instructor. Studies formal legal processes involved in criminal practice from arrest through post-trial motions, sentencing, and appeal. Describes constitutional rights of the accused and the definitions of various criminal offenses. Credit may be earned in LAS 235 or LSP 235 but not in both. (45-0)

**LSP 240 Domestic Relations 2 Sem Hrs**  
Prerequisite: Legal Support Professional program or permission of instructor. Studies the theoretical and practical aspects of family law with an emphasis on Michigan family law including dissolution of marriage, child custody, support, property settlements, judgments and the role of the Friend of the Court. Presents basic techniques in obtaining facts from clients in order to prepare and draft complaints, answers, financial affidavits and verified statements. Credit may be earned in LAS 240 or LSP 240 but not in both. (30-0)

**LSP 245 Personal Injury 3 Sem Hrs**  
Prerequisite: Legal Support Professional program or permission of instructor. Studies the principles and legal theories relating to intentional and negligent torts to the person. Introduces medical terms based on a "building block" system of word formation. Includes workman's compensation, malpractice/negligence of professionals, auto negligence, products liability, dram shop liability, assault and battery, and premises liability. Credit may be earned in LAS 245 or LSP 245 but not in both. (45-0)

**LSP 250 Corporate Law 2 Sem Hrs**  
Prerequisite: Legal Support Professional program or permission of instructor. Describes the nature of corporations, partnerships, and proprietorships with an emphasis on the corporate structure including formation and dissolution, amending Articles of Incorporation and by-laws, shareholders' and directors' meetings, corporate equity and debt securities, as well as employment and shareholders agreements. Credit may be earned in LAS 250 or LSP 250 but not in both. (30-0)

**LSP 253 Bankruptcy Law 3 Sem Hrs**  
Prerequisite: LSP 110. Illustrates the legal aspects of the bankruptcy law and demonstrates the practical approach to working in this area. Reviews Federal Bankruptcy Law including different types of bankruptcy chapters, exemptions, dischargeable and nondischargeable debts, preferences, the role of the Bankruptcy Trustee, and preparation of petitions and schedules in bankruptcy. Emphasizes the effective use of the Legal Support Professional. Credit may be earned in LAS 253 or LSP 253 but not in both. (45-0)

**LSP 260 Legal Support Internship I 1 Sem Hr**  
Prerequisite: Must have completed all Legal Support Professional required courses or permission of LSP Coordinator. Requires forty (40) hours of work experience in a law or law-related office. Credit may be earned in LAS 260 or LSP 260 but not in both. (0-15)

**LSP 261 Legal Support Internship II 2 Sem Hrs**  
Prerequisite: Must have completed all Legal Support Professional required courses or permission of LSP Coordinator. Requires eighty (80) hours of work experience in a law or law-related office. (0-30)

**LSP 262 Legal Support Internship III 3 Sem Hrs**  
Prerequisite: Must have completed all Legal Support Professional required courses or permission of LSP Coordinator. Requires one hundred twenty (120) hours of work experience in a law or law-related office. (45-0)

**LSP 280 Legal Research and Writing 3 Sem Hrs**  
Prerequisite: WRITING LEVEL 5 or 5B and LSP 115. Develops legal research techniques for both state and federal case law, statutes and administrative regulations. Emphasizes basic legal reasoning and writing skills for logical, organized problem solving. Familiarizes students with the most frequently used reference materials as well as online, commercially available legal databases including development of search queries. Describes techniques for presentation of technical material in formal and informal written reports, letters, or other current forms of business communication. Credit may be earned in LAS 120 or LSP 280. (45-0)

**LSP 290-299 Special Projects in Legal Support Professional**

## Lifelong Wellness

**LW 206A Occupational Wellness 1 1 Sem Hr**  
Prerequisite: Admission to RAD or NUR programs. Introduces wellness concepts, behavioral patterns, and activities that can be incorporated into the lifestyles of those working in a wide variety of health occupational settings. (15-0)

**LW 220H Lifelong Wellness - Honors 1 Sem Hr**  
Prerequisite: LEVEL 5 READING, LEVEL 3 WRITING, and permission of the Honors Office. Promotes student understanding and experience of the direct correlation between positive lifestyle habits and well being through a series of classroom lectures that cover a variety of wellness topics and disease prevention. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in only one of the following: LW 220, LW 220H, or LW 206A. (15-0)

**LW 220 Lifelong Wellness 1 Sem Hr**  
Promotes student understanding and experience of the direct correlation between positive lifestyle habits and well being through a series of classroom lectures that cover a variety of wellness topics and disease prevention. Credit may be earned in only one of the following: LW 220, LW 220H, or LW 206A. (15-0)

**LW 221 Fitness and Wellness 2 Sem Hrs**  
Promotes student understanding and experience of the direct correlation between positive lifestyle habits and wellbeing through a series of classroom lectures that cover a wide variety of wellness topics and disease prevention with application of these concepts through participation in aerobic conditioning, resistance training, diet analysis, and health assessments. Successful completion of LW 221W meets the Wellness graduation requirement. (15-30)

**LW 290-299 Special Projects in Lifelong Wellness**

## Lifelong Wellness Activity

**LWA 101 Fitness for Life 1 Sem Hr**  
Introduces basic concepts underlying fitness and wellness as they relate to optimal healthful living using a wide variety of aerobic conditioning and resistance training techniques. Credit may be earned in LW 101 or LWA 101 but not in both. (0-30)

**LWA 105 Women's Fitness 1 Sem Hr**  
Introduces basic concepts underlying fitness and wellness as they relate to optimal healthful living using a wide variety of aerobic conditioning and resistance training techniques. (15-15)

**LWA 106 Athletic Conditioning 1 Sem Hr**  
Designed to improve current level of fitness. Uses weight, circuit, plyometric, and endurance exercises to improve power, balance, and agility. Incorporates the five health-related components of fitness: cardiorespiratory endurance, muscle strength and endurance, flexibility, and body composition. Credit may be earned in LW 106 or LWA 106 but not in both. (15-15)

**LWA 108 Weight Training 1 Sem Hr**  
Introduces a systematic program of body conditioning and development through the use of weight exercises to improve individual wellness. Credit may be earned in one of the following ONLY: LWA 108, LW 107, LW 108, or LW 109. (0-30)

**LWA 109 Weight Training for Women 1 Sem Hr**  
Introduces resistance training concepts. Presents, develops, and practices methods for muscular strength and endurance. Pre- and post-fitness assessment testing will be done and individual printouts will be made available. (0-30)

**LWA 110 Jogging 1 Sem Hr**  
Introduces jogging as a means to obtain or improve current levels of health or conditioning. Emphasizes jogging to impact cardiorespiratory health. Uses aerobic endurance activities involving training techniques, skilled pacing, weights, calisthenics, proper stretching, and nutritional information to provide a complete exercise program. Credit may be earned in LW 110 or LWA 110 but not in both. (15-15)

**LWA 111 Circuit Training 1 Sem Hr**  
Maintains and improves physical fitness levels. Uses weights, calisthenics, and endurance exercises in different combinations to provide complete workouts in a limited amount of time. Credit may be earned in LW 111 or LWA 111 but not in both. (0-30)

**LWA 113 Tae Kwon Do I 1 Sem Hr**  
Provides an introduction to non-contact martial arts stressing technique and qualities of respect, self-discipline, and skills of self-defense. Credit may be earned in LW 113 or LWA 113 but not in both. (0-30)

**LWA 114 Tae Kwon Do II 1 Sem Hr**  
Prerequisite: LWA 113. Provides an opportunity to utilize advanced techniques in a non-contact martial art class at the intermediate level. This course is mainly designed for yellow stripe through sixth gup color belts. Credit may be earned in LW 114 or LWA 114 but not in both. (0-30)

**LWA 115 Aikido 1 Sem Hr**  
Provides an introduction to a non-aggressive martial art stressing use of spiritual energy, self-cultivation, mutual respect, and skills of self-defense. Credit may be earned in LW 115 or LWA 115 but not in both. (0-30)

**LWA 116 Tai Chi 1 Sem Hr**  
Enhances physical and emotional well-being through the ancient Chinese martial art of Tai Chi. Improves understanding and knowledge of the philosophy, theory, and application of the Wu style of Tai chi, and how this relates to self-improvement in daily life. Improves muscular endurance, muscular strength, flexibility, balance, and cardiorespiratory health based on muscular contraction and release in continuous slow movements of the Tai Chi form. Credit may be earned in LW 116 or LWA 116 but not in both. (15-15)

**LWA 118 Sports Judo 1 Sem Hr**  
Introduces the rules, skills, and courtesies in sports judo, as well as the special conditioning required. Credit may be earned in one of the following ONLY: LWA 118, LW 117, LW 118, or LW 119. (0-30)

**LWA 119 Jujitsu 1 Sem Hr**  
Introduces the fundamental movements and submissions of Jujitsu. Provides opportunity in sport specific strength and conditioning. Pre- and post-fitness assessment testing will be administered. (15-15)

**LWA 122 Fencing I 1 Sem Hr**  
Introduces foil fencing, its basic fundamentals, techniques, rules, and safety measures. Credit may be earned in one of the following ONLY: LWA 122, LW 122, LW 201, or LEA 201. (0-30)

**LWA 124 Basketball 1 Sem Hr**  
Introduces basic skills of passing, dribbling, shooting, positional play, rules, and strategy of the game. Includes special conditioning to improve individual wellness. Credit may be earned in one of the following ONLY: LWA 124, LW 123, LW 124, or LW 125. (0-30)

**LWA 127 Volleyball I 1 Sem Hr**  
Introduces basic skills of handling the ball, passing, setting, spiking, net-rebound play, and blocking. Includes rules and strategy. Credit may be earned in LW 127 or LWA 127 but not in both. (0-30)

**LWA 131 Racquetball I 1 Sem Hr**  
Introduces basic skills and rules necessary to participate in racquetball which is a competitive game played in a four-walled court by two, three, or four players using stringed racquets to serve and return the ball. Credit may be earned in LW 131 or LWA 131 but not in both. (0-30)

**LWA 137 Tennis I 1 Sem Hr**  
Introduces the basic strokes in tennis along with rules, strategies, and courtesies of the game. Credit may be earned in LW 137 or LWA 137 but not in both. (0-30)

**LWA 151 Kick Boxing 1 Sem Hr**  
Presents Kick Boxing as a means of self-defense and conditioning. Provides maximum cardiorespiratory benefits, muscular endurance, speed, and agility in addition to balance, flexibility, and mind/body integration. Credit may be earned in LW 151 or LWA 151 but not in both. (15-15)

**LWA 152 Astanga Yoga 1.5 Sem Hrs**  
Introduces the basic tools used in learning Astanga Yoga. Uses sequential postures, called asana, for linking together a vigorous flow of movements. Includes workout that is physically, spiritually, and mentally engaging. Credit may be earned in LW 152 or LWA 152 but not in both. (15-30)

**LWA 153 Dance Aerobics 1 Sem Hr**  
Provides information and skills needed to assess and improve fitness through the use of aerobic dance, exercises to music, and analysis of personal nutrition habits. Credit may be earned in LW 153 or LWA 153 but not in both. (0-30)

**LWA 154 BOSU Ball Training 1 Sem Hr**  
Introduces fitness training concepts utilizing a BOSU ball. Presents training methods for improving muscle strength, endurance, balance, agility, and flexibility. Presents, develops, and practices BOSU ball activities that provide cardiorespiratory benefits and improved body composition. Pre- and post-fitness assessments will also be performed and results will be explained. (15-15)

**LWA 155 Slide Aerobics 1 Sem Hr**  
Prepares and strengthens the body for lateral or angular stress while providing a superb cardiovascular workout. Incorporates upper and lower body strength and endurance resistance exercises in addition to developing endurance, power, and balance. Credit may be earned in LW 155 or LWA 155 but not in both. (0-30)

**LWA 156 Stability Ball Training 1 Sem Hr**  
Introduces fitness training concepts utilizing a stability ball. Presents training methods for improving muscle strength, endurance, and flexibility. Also presents, develops, and practices stability ball activities that provide cardiorespiratory benefits and improved body composition. Provides effective balance training through use of the stability ball as a tool. Pre- and post-fitness assessments will also be performed and results will be explained. Credit may be earned in LW 156W or LWA 156W but not in both. (15-15)

**LWA 157 Step Aerobics 1 Sem Hr**  
Incorporates bench stepping to enhance cardiorespiratory endurance and muscle tone using the aerobic principle. Emphasis on the importance of fitness and a healthy lifestyle is also applied. Credit may be earned in LW 157 or LWA 157 but not in both. (0-30)

**LWA 158 Pilates 1 Sem Hr**  
Provides total body strengthening, stretching, and conditioning through Pilates-based mat work to achieve overall fitness and improved health. Focuses on the attainment of core strength in the abdomen and trunk. Includes specific exercises concentrating on the use of breathing patterns to help control movement, and visual imagery to engage the mind and body together. Credit may be earned in LW 158 or LWA 158 but not in both. (15-15)

**LWA 159 Fitness Walking 1 Sem Hr**  
Introduces the concept of daily walking to contribute to one's wellness, with emphasis on developing personal walking program. Credit may be earned in LW 159 or LWA 159 but not in both. (15-15)

**LWA 163 Modern Dance I 1 Sem Hr**  
Introduces the fundamentals of body movement through rhythmic activities designed to improve strength, flexibility, timing, spatial awareness, and coordination. Includes improvisation, simple choreography, and a brief survey of the history of modern dance and the contemporary dance scene. Credit may be earned in LW 163 or LWA 163 but not in both. (0-30)

**LWA 165 Jazz Dance I 1 Sem Hr**  
For the beginner, an introduction to basic jazz dance techniques (stretches, isolations, floor work, turn and locomotor patterns, etc.) and practice in combining them into dance phrases. There will be simple choreography problems and a survey of the history of jazz dance and of the contemporary jazz dance scene. Credit may be earned in LW 165 or LWA 165 but not in both. (0-30)

**LWA 167 Ballet I 1 Sem Hr**  
Introduces the basic movements of ballet coordinated with exercises for stretching, flexing, and toning. Includes postural alignment and correction, basic barre work, and beginning center adage and allegro movements. (0-30)

**LWA 172 Swimming I 1 Sem Hr**  
Develops fundamental swimming and safety skills. Credit may be earned in LW 172 or LWA 172 but not in both. (0-30)

**LWA 173 Swimming II 1 Sem Hr**  
Prerequisite: LWA 172. Introduces theory and practice of the five basic swimming strokes (front crawl, side stroke, elementary back stroke, and breast stroke). Emphasizes water safety skills and knowledge. Credit may be earned in LW 173 or LWA 173 but not in both. (0-30)

**LWA 174 Swimming III Conditioning 1 Sem Hr**  
Prerequisite: LWA 173. Acquaints the student with the basic principles of cardiovascular fitness and strength in order to increase these components of fitness through swimming. Credit may be earned in LW 174 or LWA 174 but not in both. (0-30)

**LWA 183 Water Aerobics 1 Sem Hr**  
Introduces the basic concepts of water resistance and incorporates them into an individual fitness program that promotes strength, flexibility, and aerobic capacity. Swimming skills not required. Credit may be earned in LW 183 or LWA 183 but not in both. (0-30)

**LWA 204 Bicycling For Fitness 1 Sem Hr**  
Introduces the fundamentals of cycling as a means to obtain or improve current levels of health or conditioning. Emphasizes cardiorespiratory health, muscular strength/endurance, flexibility, and body composition. Includes selection and maintenance of equipment, pedaling, and correct techniques of gear shifting. Student must furnish any type of bike (road, hybrid, or mountain). (0-30)

**LWA 206B Occupational Wellness 2 .5 Sem Hr**  
Prerequisite: Admission to DH, DMS, PTA, or RAD program. Continues wellness concepts, behavioral patterns, and activities that can be incorporated into the lifestyles of those working in a wide variety of health occupation settings. Credit may be earned in LW 206B or LWA 206B but not in both. (0-15)

**LWA 206C Occupational Wellness 3 .5 Sem Hr**  
Prerequisite: Admission to DH, DMS, PTA, or RAD program. Continues wellness concepts, behavioral patterns, and activities that can be incorporated into the lifestyles of those working in a wide variety of health occupation settings. Credit may be earned in LW 206C or LWA 206C but not in both. (0-15)

**LWA 210 Tae Kwon Do III 1 Sem Hr**  
Prerequisite: LWA 114. Provides an opportunity to utilize advanced techniques in a non-contact martial art class at an advanced intermediate level. (0-30)

**LWA 280 Self-Defense/Fitness 2 Sem Hrs**  
Prerequisite: Permission of instructor. Concurrent enrollment in CJ 101, LWT 175, and OAT 153 for Basic Police Training Academy. Teaches methods of self-defense using pressure points and leverage for subject control. Emphasizes subduing dangerous or violent individuals for criminal justice purposes. Fitness module emphasizes regular program of calisthenics, stretching, strength building, and conditioning through aerobic and non-aerobic activities. Grade of "C" (2.0) or better in this course in order to complete Basic Police Training Academy. Credit may be earned in LW 280 or LWA 280 but not in both. (0-60)

#### **LWA 290-299 Special Projects in Lifelong Wellness Activity**

### **Lifelong Wellness Theory**

**LWT 165 Community First Aid 1 Sem Hr**  
Introduction to basic first aid skills. Necessary as the primary link in the Emergency Medical Services system. Adult CPR certification may be received. (15-0)

**LWT 170 Basic Life Support for the Health Care Provider 1 Sem Hr**  
Develops cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) knowledge and skills to the level of a health care provider. (15-0)

**LWT 175 Advanced First Aid and Emergency Care 3 Sem Hrs**  
Prerequisite: Permission of instructor. CJ 101, LW 280, and OAT 153 must be taken concurrently for Basic Police Training Academy. Provides knowledge and practical skills necessary to assist victims of injury or sudden illness. Covers CPR, wounds, choking, poisoning, substance abuse, burns, exposure to heat and cold, emergency childbirth, fractures, stroke, convulsive disorders, diabetes, auto and pool extrication. Successful completion of course entitles student to American Red Cross CPR and Advanced First Aid Certifications. Grade of "C" (2.0) or better in this course in order to complete Basic Police Training Academy. (45-15)

**LWT 176 Lifeguarding 1 Sem Hr**  
Prerequisite: Skill and knowledge of the five basic strokes. Provides knowledge and skills of the American Red Cross units and progressions. Results in certification upon successful completion of all the lifesaving and water safety requirements. Credit may be earned in LW 176 or LWT 176 but not in both. (0-30)

**LWT 181 Adapted Aquatics Aide 1 Sem Hr**  
Introduces swimming techniques, water exercises, simulation of disabilities, supervised practice teaching, and basic water safety involved with physical and mental impairments. Credit may be earned in LW 181 or LWT 181 but not in both. (0-30)

**LWT 185 Water Safety Instructor 1 Sem Hr**  
Prerequisite: Current American Red Cross Emergency Water Safety or Lifeguard card and swimmer level skills. Provides theory and techniques in aquatics, practice teaching, water safety, survival swimming, swimming program development and pool and waterfront administration. Certification as a Water Safety Instructor may result upon satisfactory completion of the course. Credit may be earned in LW 185 or LWT 185 but not in both. (0-30)

<b>LWT 186</b>	<b>Women's Self Defense</b>	<b>1 Sem Hr</b>
Provides female students with information, tactics, and considerations that may be useful in avoiding and defending themselves against attacks. (15-0)		
<b>LWT 210</b>	<b>Nutrition: The Science of Optimal Living</b>	<b>3 Sem Hrs</b>
Presents nutrition science as a key element for optimal living. Plans diet, principles, food nutrients, metabolism, diet analysis, and the health effects of nutrition will all be evaluated and applied. (45-0)		
<b>LWT 212</b>	<b>Introduction to Meditation</b>	<b>1 Sem Hr</b>
Provides an overview of the history and purpose of meditation. Introduces students to the practice of various meditation techniques. Emphasizes the role of meditation for concentration, relaxation, stress relief, and personal and spiritual growth. (15-0)		
<b>LWT 230</b>	<b>Theory of Strength and Conditioning</b>	<b>3 Sem Hrs</b>
Prerequisite: BIO 101, BIO 140 or BIO 152 with a "C" (2.0) minimum grade. Explores a variety of strength training principles and theories through the study of multiple exercise modes including free and machine weights, plyometrics, speed and agility, and cardiovascular training. Discusses specific anatomy and physiology, as well as exercise guidelines, in preparation for program development. (45-0)		
<b>LWT 231</b>	<b>Introduction to Athletic Training</b>	<b>3 Sem Hrs</b>
Introduces students to the roles, responsibilities, and qualifications of a Certified Athletic Trainer (A.T.C.). Provides an overview of the basic knowledge and skills possessed by an A.T.C. including their role in the sports medicine team, nutrition, injury prevention, assessment, and treatment, as well as learning to identify emergency situations and provide direction for their management. (45-0)		
<b>LWT 240</b>	<b>Health Fitness Instructor/Personal Trainer</b>	<b>4 Sem Hrs</b>
Prerequisites: BIO 101 or BIO 152 and LWT 251 or BIO 251 with a "C" (2.0) minimum grade. Introduces the skills and knowledge needed to become a certified personal trainer. Covers how to screen and evaluate prospective clients, design safe and effective exercise programs, identify physiological and psychological response to exercise, promote lifestyle behavior modification, quantify the energy cost of work (physical activity), and communicate effectively. Includes self-employment issues as well as legal issues. (60-0)		
<b>LWT 241</b>	<b>Personal Trainer</b>	<b>4 Sem Hrs</b>
Prerequisite: BIO 101, BIO 111, or BIO 130. Introduces the skills and knowledge needed to become a certified personal trainer. Covers how to screen and evaluate prospective clients, design safe and effective exercise programs, and instruct clients in correct exercise technique to avoid and prevent injury. Includes self-employment issues as well as legal issues. (60-0)		
<b>LWT 242</b>	<b>Group Fitness Instructor</b>	<b>4 Sem Hrs</b>
Prerequisites: BIO 101 or BIO 152, LW 220 and concurrent enrollment in one of the following: LW 151, LW 153, LW 155, or LW 157. Introduces the skills and knowledge needed to become a certified Group Fitness Instructor. Includes how to screen and evaluate prospective clients, design safe and effective exercise programs, instruct clients in correct exercise techniques to avoid injury, and respond to the typical questions and problems that arise in a group exercise setting. (60-0)		
<b>LWT 251</b>	<b>Exercise Physiology</b>	<b>4 Sem Hrs</b>
Prerequisites: BIO 101 or BIO 152, and LW 220. Emphasizes the physiological responses of the human body to acute and chronic bouts of exercise. Presents the study of health/fitness appraisal, exercise prescription, quantifying the energy cost of work (physical activity), identifying physiological and psychological responses to exercise, and the administration of exercise programs to diverse populations. Credit may be earned in LWT 251 or BIO 251 but not both. (60-0)		

<b>LWT 255</b>	<b>Health Fitness Management and Promotion</b>	<b>3 Sem Hrs</b>
Introduces and explores the different and interesting settings in which health and fitness educators practice and the job responsibilities and opportunities within each of those settings. Emphasizes application, skill development, and professional identity and direction in health promotion occupations. (45-0)		
<b>LWT 260</b>	<b>Health Fitness Experience</b>	<b>5 Sem Hrs</b>
Prerequisite: LWT 210, LWT 230, LWT 240, LWT 251, and LWT 255. Introduces Health Fitness Education and Promotion students to "on the job" experiences within the Health Promotion field. Includes exercise prescription, health education, health promotion administration and program development in the 300-hour internship experience. Students must have current CPR certification. (9-80)		
<b>LWT 266</b>	<b>Teaching of Elementary Physical Education</b>	<b>3 Sem Hrs</b>
For prospective teachers; deals with curriculum development, principles, methods and materials used in conjunction with the teaching of physical education in the elementary schools. (45-0)		
<b>LWT 290-299</b>	<b>Special Projects in Lifelong Wellness Theory</b>	

## Management

<b>MGT 110</b>	<b>Business Mathematics</b>	<b>3 Sem Hrs</b>
Prerequisite: MATH LEVEL 3. Covers principles necessary for an understanding of math of the business world. Includes various methods of computing interest and bank discounts; installment buying; F.I.C.A. Federal Income Taxes and other payroll deductions; markup, cost and selling prices; various wage payment systems; sales and property taxes; insurance; measures of central tendency; and an introduction to the metric system. Credit may be earned in MGT 110 or GB 110 but not in both. (45-0)		
<b>MGT 143</b>	<b>Principles of Advertising</b>	<b>3 Sem Hrs</b>
Provides a broad view of advertising from the marketing and consumer point of view. Historical background, economic and social aspects, roles of advertising, advertising stages, target marketing, media, using selected behavioral science information in advertising, and obtaining proper advertising appeal are included. Credit may be earned in GB 143 or MGT 143 but not in both. (45-0)		
<b>MGT 145</b>	<b>Principles of Sales</b>	<b>3 Sem Hrs</b>
Emphasizes the marketing concept and the importance of personal selling for those engaged in the marketing of products, services or ideas. Includes an analysis of the steps in a sales proposal. Classroom presentations by students required. Credit may be earned in GB 145 or MGT 145 but not in both. (45-0)		
<b>MGT 151</b>	<b>Merchandising Display</b>	<b>3 Sem Hrs</b>
Explores display as a major component of sales promotion. Studies color and basic design principles in terms of their application to display. Analyzes functions, types, and tools of display. Designs and coordinates windows and interior displays. Covers steps in planning and coordination sales promotions. Emphasizes planning, producing and evaluating effective visual displays. Credit may be earned in only one of the following: FM 151, GB 151 or MGT 151. (45-0)		
<b>MGT 152</b>	<b>Textiles</b>	<b>3 Sem Hrs</b>
Studies natural and man-made fibers, their properties and unique characteristics. Identifies fabrics used in wearing apparel and interior design; fabric production, performance and use; final processes and finishes; the study of weaves, pattern and color. Credit may be earned in only one of the following: FM 155, GB 152 or MGT 152. (45-0)		

**MGT 153H Introduction to Business - Honors 3 Sem Hrs**

Prerequisites: READING LEVEL 5 or 5B and WRITING LEVEL 4 or 4B and permission of the Honors Office. Clarifies the role of business in modern society both domestic and international. Includes an overview of the American business environment, forms of business ownership, obtaining and managing financial resources, management of organizations and human resources, and current issues in the free enterprise system. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. (45-0)

**MGT 153 Introduction to Business 3 Sem Hrs**

Clarifies the role of business in modern society both domestic and international. Includes an overview of the American business environment, forms of business ownership, obtaining and managing financial resources, management of organizations and human resources, and current issues in the free enterprise system. Credit may be earned in GB 153 or MGT 153 but not in both. (45-0)

**MGT 157 Principles of Merchandising 3 Sem Hrs**

Studies merchandising, with an emphasis on contemporary designers and issues. Explores primary, secondary, and consumer markets. Discusses merchandise characteristics, planning and profitability. Addresses technology in the merchandising environment. Credit may be earned in only one of the following: FM 170, GB 157 or MGT 157. (45-0)

**MGT 243 Principles of Marketing 3 Sem Hrs**

Prerequisite: MGT 153 or GB 153 is recommended. Provides an understanding and interpretation of the marketing system and its importance in the economy and the place of the marketing function in business management. The marketing framework is established and a basic understanding of the psychological, environmental, and managerial functions and processes that are employed in contemporary marketing are presented. Credit may be earned in GB 243 or MGT 243 but not in both. (45-0)

**MGT 245 Principles of Management 3 Sem Hrs**

Prerequisite: MGT 153 or GB 153 is recommended. Theories of management practices will be discussed and fundamentals of administrative, executive, and staff management explained. Emphasis is placed on discussion of the management functions of planning, organizing, directing, controlling, as well as preparation of information required for decision making. The analysis of management problems and the synthesis of solutions will be covered. Credit may be earned in GB 245 or MGT 245 but not in both. (45-0)

**MGT 247 Principles of Retailing 3 Sem Hrs**

Prerequisite: MGT 153 or GB 153 is recommended. Store location, organization structure, and retail personnel management are discussed in detail. Merchandising policies and budgets, and buying and pricing merchandise are presented. Retail advertising, personal selling, customer services, and loss prevention are also presented in some detail. The scope of the retailing industry, requirement of retail management as well as careers in retailing are discussed in the course. Credit may be earned in GB 247 or MGT 247, but not in both. (45-0)

**MGT 248 Principles of Buying for Resale 3 Sem Hrs**

Prerequisite: MGT 247 or GB 247 is recommended. The buying function in retailing and wholesaling will be explored in depth. The principles of foreign and domestic vendor location and the legality and ethics in the buyer-vendor relationship are covered. The factors determining merchandise selection, including consumer analysis, building model stocks, and estimating sales potential will be studied. Merchandising expense control factors, manual and computer inventory control systems, as they relate to buying, will be studied. Credit may be earned in GB 248 or MGT 248, but not in both. (45-0)

**MGT 251 Business Law I 3 Sem Hrs**

This course provides a comprehensive study of both state and federal court systems, and the relationships of the participants in a lawsuit, including judges, juries, litigants, witnesses and attorneys. Particular areas of business law that are studied in the context noted above include tort law, contract law, agency law, and the law of personal property and bailments. Credit may be earned in GB 251 or MGT 251, but not in both. (45-0)

**MGT 252 Business Law II 3 Sem Hrs**

Prerequisite: MGT 251 or GB 251 or permission of instructor. This course provides a continued study of court systems, with emphasis in specialized areas of business law including sales law, commercial paper law, secured transactions and bankruptcy law, real property law and corporation law. The Uniform Commercial Code and recent consumer protection legislation are stressed. Credit may be earned in GB 252 or MGT 252 but not in both. (45-0)

**MGT 254 Applied Merchandising and Promotional Strategies 3 Sem Hrs**

Prerequisite: GB 243 or MGT 243; FM 170 or GB 157 or MGT 157. Introduces strategic marketing decisions using cases and real life experiences. Introduces the conception, development and implementation of a marketing activity, that will be conducted by the students, with an actual budget. Uses practical experience in preparing and giving several types of presentations to live audiences. Credit may be earned in only one of the following: MGT 254, FM 240 or GB 240. (45-0)

**MGT 255 Conflict Management 3 Sem Hrs**

Prerequisite: MGT 251. Provides a comprehensive study of the current methods for managing and resolving conflicts, which can be done internally or externally of the entity. Provides an alternative to litigation. (45-0)

**MGT 256 Human Resources Management I 3 Sem Hrs**

Prerequisite: MGT 153 or GB 153 is recommended. Development of human resources management; the environment in which human resources management must operate; contemporary legal guidelines; human resource planning and recruitment; developing effectiveness in human resources through training, development, and appraisal; and creating a productive work environment through motivation, communication, leading and directing. Credit may be earned in GB 256 or MGT 256 but not in both. (45-0)

**MGT 257 Human Resources Management II 3 Sem Hrs**

Prerequisite: MGT 256 or GB 256 or permission of instructor. Develops advanced understanding in a variety of Human Resource topics which may include but is not limited to employee-management relationships, dynamics of labor relations, collective bargaining, disciplinary action, compensation management, incentive compensation, employee benefits, safety and health, auditing the Human Resources Management program, and international Human Resources Management. (45-0)

**MGT 265 International Business 3 Sem Hrs**

Prerequisite: MGT 153 or GB 153 is recommended. An examination of the three environments within which the typical business person must function in a global economy: domestic, foreign and international. The international organizations (i.e., GATT, IMF, OPEC, EC and the UN) and the international monetary system will be covered. Physical, sociocultural, political, legal, labor and financial forces in global markets will be analyzed. Case studies will be used to emphasize management decision making in marketing, production, financing and staffing in world-wide companies. Credit may be earned in GB 265 or MGT 265 but not in both. (45-0)

**MGT 274 Computer Aided Decisions 2 Sem Hrs**  
Prerequisites: CST 133 or CIS 133 and MGT 243 or GB 243 or MGT 245 or GB 245. Practices the strategic decision making process in management/marketing within an interactive business simulation class using the IBM or compatible microcomputer. Explores the use of microcomputer application software in the area of decision support. Topics include modeling, simulation, query, languages, spreadsheets, and expert systems. Presents strategic decision situations to illustrate techniques utilized for unstructured decision making in the business environment. Credit may be earned in GB 274 or MGT 274 but not in both. (30-0)

**MGT 280 Market Experience New York 2 Sem Hrs**  
Prerequisite: Permission of instructor. Studies the New York business market through visits to manufacturers, designers, buyer showrooms, resident buying offices, advertising agencies, retailers, museums, Wall Street, and other places of interest. Students pay tuition plus all their expenses. Credit may be earned in only one of the following: FM 250, GB 280, or MGT 280. (30-0)

**MGT 281 Market Experience Chicago 1 Sem Hr**  
Prerequisite: Permission of instructor. Students will study the Chicago market through visits to the Apparel Center, buyers showrooms, resident buying offices, designers, ready-to wear merchants, the Mercantile Exchange, and other areas of interest. Students pay tuition plus all their expenses. Credit may be earned in only one of the following: FM 251, GB 281, or MGT 281. (15-0)

**MGT 290-299 Special Projects in Management**

## Manufacturing & Industrial Technology

**MIT 111 Manufacturing Processes 3 Sem Hrs**  
Teaches the fundamentals of engineering materials and manufacturing processes, and how they interrelate in the design of products. Credit may be earned in MFG 111 or MIT 111 but not in both. (45-0)

**MIT 118 Safety Practices and Procedures 2 Sem Hrs**  
Safety fundamentals as related to the economics of accident prevention, analysis of accident causes, mechanical safeguards, fire prevention, facilities housekeeping, occupational diseases, first aid, safety organization, protective equipment, and the promotion of safe practices. Credit may be earned in IS 118 or MIT 118 but not both. (30-0)

**MIT 210 Lean Thinking Strategies 3 Sem Hrs**  
Explores the principles of Lean Thinking as a method of organizational management. Emphasizes the techniques used to achieve quality, cost and delivery goals such as Just-In-Time or Pull systems, 5-S, value stream mapping, workplace organization and visual controls. Discusses the roles and responsibilities in the organization for allocating resources to achieve lean management. Credit may be earned in MFG 113, MFG 114, and MFG 115 or MFG 210 or MIT 210 but not in more than one. (45-0)

**MIT 212 Manufacturing Cell 2 Sem Hrs**  
Introduces the manufacturing cell as it relates to the workplace. Teaches various cell information, i.e. tooling, material handling, layout, etc. Credit may be earned in MFG 212 or MIT 212 but not in both. (30-0)

**MIT 213 Mechanical Power Transmission 3 Sem Hrs**  
Prerequisites: DRF 121, MS 113 or MS 114, and MT 221. Develops skills in designing and specifying mechanical power transmission components for use in a product or process. Uses mathematical skills to design parts, calculate design requirements, specify commercial components and design the layout of the mechanical power drive train. Verifies that the assembly meets all specifications and quality requirements. Develops a Bill of Materials for the mechanical power transmission components. Uses presentation skills to demonstrate how the components were designed and specified. Credit may be earned in MFG 213 or MIT 213 but not in both. (45-0)

**MIT 230 Plastics Technology 3 Sem Hrs**  
Introduces the manufacturing technician, supervisor, or engineer to plastic materials and the corresponding conversion technologies. Defines the processing, material selection and testing of common industrial polymers. Credit may be earned in MFG 230 or MIT 230 but not in both. (30-20)

**MIT 231 Plastic Part Design & Processing 3 Sem Hrs**  
Prerequisite: MFG 230. Builds fundamental skills in plastic design. Focuses on the design aspects of injection molded thermoplastic parts including blow molding and thermoforming. Explores the interrelationships between material, processing and tooling while maintaining profitability. Credit may be earned in MFG 231 or MIT 231 but not in both. (45-0)

**MIT 290-299 Special Projects in Manufacturing and Industrial Technology**

## Machine Tool Operation

**MS 113 Introduction to Machining Processes 2 Sem Hrs**  
Introduces the manufacturing facility. Utilizes safety, materials, hand tools, precision instruments, drill presses, lathes, mills, pedestal grinders, and saws. Studies fundamentals and procedures to provide an understanding of manufacturing processes. Credit may be earned in MS 113 or SKTR 181 but not in both. (34-26)

**MS 114 Industrial Technology Machine Tools 3 Sem Hrs**  
Introduces the manufacturing facility. Utilizes safety, materials, hand tools, precision instruments, drill presses, lathes, mills, pedestal grinders, and saws. Studies fundamentals and procedures to provide an understanding of manufacturing processes. Demonstrates greater knowledge of machine tool practices and applies that knowledge to educate others. Credit may be earned in MS 114 or SKTR 182 but not both. (34-56)

**MS 120 Machinery's Handbook 3 Sem Hrs**  
Prerequisite: MS 113 or MS 114 or SKTR 182; and SKMA 103 or MTH 103 or MT 110. Focuses on learning how to use and understand the Machinery's Handbook. Credit may be earned in either MS 120 or SKTR 183 but not both. (45-0)

**MS 130 Machine Tools I 6 Sem Hrs**  
Prerequisites: MS 114 or permission of instructor. Trains in the set up and operation of various metal working machines and construction of projects from engineering drawings. Trains in use of a variety of measuring instruments to take measurements of one thousandth of an inch or closer. Utilizes safety, mills, lathes, drill presses, saws, grinders, speeds and feeds to complete duty and task list. (50-100)

**MS 230 Machine Tools II 6 Sem Hrs**  
Prerequisites: MS 130 or permission of instructor. Trains in advanced set up and operation of various metal working machines to construct projects from engineering drawings. Trains in use of a variety of measuring instruments to take measurements of one ten thousandth of an inch or closer. Utilizes safety, materials, hand tools, precision measuring instruments, lathes, mills, flat surface grinders OD and ID surface grinders. Emphasizes jigs, fixturing, part location, speeds and feeds. (50-100)

**MS 290-299 Special Projects in Machine Tool Operations**

## Mechanical Technology

**MT 110 Machine Tool Calculations 4 Sem Hrs**  
Prerequisite: Math Level 4. Includes the following geometry topics: angles, triangles, polygons, circles, prisms, cylinders, and cones. Includes right-triangle trigonometry, radian measure, oblique-triangle trigonometry, and graphs of trigonometric functions. May receive credit in only one of the following: MTH 103, SKMA 103 or MT 110. (60-0)

**MT 151      Power Transmission      3 Sem Hrs**

Prerequisite: MATH LEVEL 5: Identifies and explains safety rules, regulations, test procedures, installation, removal, and operation of belt drives, chain drives, mechanical couplings, and mechanical drive systems. Demonstrates the concepts of shaft alignment. Credit may be earned in MT 151 or SKMT 151 but not both. (30-15)

**MT 161      Industrial Rigging      2 Sem Hrs**

Prerequisite: MATH LEVEL 5: Studies the methods of safe transfer of loads and provides comprehensive easy to understand and reliable information of the entire field of rigging operations. Discusses techniques and methods to accomplish the rigger's task with the greatest safety for all of the workers on a project, as well as for passers-by and the public in general. Identifies sources of, organizes, and describes safety rules, regulations and practices related to job-site hazards, personal protective equipment, aerial work, hazard communication, and electrical safety. Credit may be earned in MT 161 or SKMT 161 but not both. (30-15)

**MT 220      Hydraulics & Pneumatics I      3 Sem Hrs**

Prerequisite: MATH LEVEL 6 or permission of instructor. Focuses on the operation and function of fluids, pumps, compressors, valves, cylinders, motors, filters, and other components used in the power and control of machine tools, construction and agricultural equipment. Uses algebraic formulas, charts, and graphic symbols for design and diagnosis of basic circuits. Credit may be earned in either SKMT 101 or MT 220 but not in both. (30-30)

**MT 221      Introduction to Engineering Materials      3 Sem Hrs**

Prerequisite: MIT 111 and MATH LEVEL 6. Examines the physical, chemical and mechanical properties of metals, ceramics, polymers, and composite materials and relates these properties to application requirements. Exams the micro and macro structures of these materials along with the tests and measurements designed to identify them. Discusses concepts necessary to the selection and specification of materials for making products and building structures. (30-30)

**MT 250      Statics and Strength of Materials      3 Sem Hrs**

Prerequisites: PHY 101 and MTH 103. Studies forces acting on rigid bodies, including applications of these forces to practical design problems. Introduces and uses concepts of stress in tension, compression, torsion, and shear in various combinations. (45-0)

**MT 251      Statics and Dynamics      3 Sem Hrs**

Prerequisites: PHY 111 and MTH 121. Studies statics and dynamics of mechanical systems by solving problems of small sub-systems using a calculator. Studies forces in 2-D and 3-D acting on particle systems and rigid bodies. Solves problems using the following concepts: equilibrium laws, centroids, center of gravity, moment of inertia. Uses 3 methods to study dynamics of motion - kinematics, work/energy and impulse/momentum. (45-0)

**MT 252      Strength of Materials      3 Sem Hrs**

Prerequisites: ENG 112 or ENG 113 and MT 251. Uses mathematical and computer methods, as well as Mohr's circle, to determine stress, strain, load, and deflection relationships for structure and machine elements. Uses machine components in tension, compression, or shear, beams in bending or deflection, columns, and bolted joints in design calculations. (45-0)

**MT 255      Kinematics of Mechanisms      3 Sem Hrs**

Prerequisites: DRF 107 and PHY 111. Uses hand calculator, graphical and computer methods, to study mechanical motion concepts by calculating displacements, velocities and accelerations. Develops proficiency in the use of terminology; vectors; kinematic drawings; displacement drawings; displacement graphs; centros; displacement, velocity and acceleration analysis, cam motion calculations. and diagrams, spur gear set and gear trains. Credit may be earned in MT 244 or MT 255 but not in both. (30-30)

**MT 256      Machine Design      3 Sem Hrs**

Prerequisites: PHY 111 or PHY 211, and MTH 121. Prior or concurrent enrollment in MT 252. Uses hand calculator and computer methods to solve for the dimensions and allowable loads of machine elements and power trains. Studies shafts, keyed couplings, bearings, gear trains, V-belt and chain drives, springs and fasteners. Requires a final design using CAD. (45-0)

**MT 258      Design for Assembly      1 Sem Hr**

Prerequisites: Instructor's consent to register. Uses the Boothroyd/Dewhurst Design for Assembly software to redesign a manufactured product. Emphasizes team work in a concurrent engineering simulation. (15-0)

**MT 290-299      Special Projects in Mechanical Technology**

## Mathematics

Course prerequisites are stated in terms of either Delta courses or math prerequisite levels (see page 123) and are intended to insure that students choose the appropriate mathematics course. Individuals may have a mathematics background equivalent to a stated prerequisite in which case they should consult a counselor/advisor for assistance in evaluating equivalencies. Any student who feels that circumstances warrant waiving a prerequisite should consult the Mathematics & Computer Science Division for approval. (PLEASE NOTE: A math course which has been successfully completed more than four years from the start date of the intended class cannot be used to fulfill the prerequisite. Demonstrated math prerequisite knowledge may be needed for enrollment in selected math class.)

**MTH 090      Math Study Skills and Practical Applications      2 Sem Hrs**

Concurrent enrollment in a math course is required. Practices success strategies to be utilized in a math class. Includes learning styles, memory process, math anxiety, time management, reading, test taking, as well as other study skills. Applies success strategies to their current math class as well as collaborative problem solving using quantitative literacy applications from many other disciplines. Does not earn credit toward graduation. (30-0)

**MTH 092      Basic Mathematics      2 Sem Hrs**

Prerequisite: MATH LEVEL 1. Provides a foundation in arithmetic. Covers four fundamental operations of whole numbers, fractions, and decimals. Includes percentages, ratios, proportions, and applications. Does not earn credit toward graduation. (30-0)

**MTH 096      Pre-Algebra      2 Sem Hrs**

Prerequisite: MATH LEVEL 2. Provides preparation for algebra. Includes fractions, decimals, integers, ratios, and percentages with an introduction to equations, graphs, and functions. May receive credit in only one of the following: MTH 106 or MTH 096 or SKMA 096 or SKMA 101. Does not earn credit toward graduation. (30-0)

**MTH 097      Algebra I      3 Sem Hrs**

Prerequisite: MATH LEVEL 3. Includes natural numbers, integers, first-degree equations and inequalities, special products, factoring, rational expressions and equations, graphs, and linear systems, exponents, and quadratic equations. May receive credit in only one of the following: MTH 107 or MTH 097 or SKMA 097 or SKMA 102. (Equivalent to first year high school algebra). Does not earn credit toward graduation. (45-0)

**MTH 103      Applied Geometry and Trigonometry      4 Sem Hrs**

Prerequisite: Math Level 4. Includes the following geometry topics: angles, triangles, polygons, circles, prisms, cylinders, and cones. Includes right-triangle trigonometry, radian measure, oblique-triangle trigonometry, and graphs of trigonometric functions. May receive credit in only one of the following: MTH 103 or SKMA 103 or MT 110. (60-0)

<b>MTH 115</b>	<b>Mathematics for Elementary Teachers I</b>	<b>3 Sem Hrs</b>
Prerequisite: MTH 097 with a grade of "C" or better or an acceptable score on the current college assessment instrument. Includes numeration systems, sets and their properties, classification of number systems (whole numbers through real number), operations and their properties, arithmetical algorithms, and problem solving. Uses a variety of learning styles, manipulatives, and calculator and computer applications. The National Council of Teachers of Mathematics Standards are incorporated. Students may use either MTH 115W or MTH 110, not both, to fulfill graduation requirements. (45-0)		
<b>MTH 116</b>	<b>Mathematics for Elementary Teachers II</b>	<b>3 Sem Hrs</b>
Prerequisite: MTH 115 or MTH 110 with a grade of "C" or better. Investigates problem solving, statistical charts and graphs, geometric figures and properties, and measurement systems including metric. Reviews fractions, decimals, percents, real numbers, their operations and properties. Reviews algebra of lines and equations. Includes a variety of learning styles using manipulatives, calculators and computer application. The National Council of Teachers of Mathematics Standards are incorporated. (45-0)		
<b>MTH 117</b>	<b>Math for Allied Health</b>	<b>2 Sem Hrs</b>
Prerequisite: MATH LEVEL 3. Reviews (very briefly) fractions, decimals, percentages, and proportions. Includes a study of the metric system and the household system with applications in converting from one system to another. Emphasizes applications including those involved in giving medications and in finding times and various rates for intravenous feedings. (30-0)		
<b>MTH 118</b>	<b>Mathematical Explorations</b>	<b>4 Sem Hrs</b>
Prerequisite: MATH LEVEL 4. Provides a course for students majoring in fields that do not have a specific mathematics requirement. Emphasizes practical applications of mathematics, problem solving, and the communication of mathematics. Includes core topics in Finance, Probability, Statistics, and Geometry. Integrates measurement in the geometry topic, and infuses algebra throughout all topics. A minimum of 4 additional topics will be selected from Economics, Calculus, Graph Theory, Set Theory, Game Theory, Number Theory, Logic, Voting, Apportionment, Combinatorics, Linear Programming, or other approved topics. A GRAPHING CALCULATOR IS REQUIRED. (60-0)		
<b>MTH 119A</b>	<b>Intermediate Algebra Extended Hours</b>	<b>4 Sem Hrs</b>
Prerequisite: MATH LEVEL 4 or MTH 097 with a grade of C or better. Includes fundamental concepts of algebra and applications, equation solving, graphs, systems of linear equations, quadratic equations, algebraic fractions, exponents, radicals, functions, and logarithms. Same content as MTH 119, but class meets 2 additional contact hours per week to allow 50% more time to review and learn each concept in MTH 119. Credit may be earned in MTH 119 or MTH 119A, but not both. A GRAPHING CALCULATOR IS REQUIRED (90-0)		
<b>MTH 119</b>	<b>Intermediate Algebra</b>	<b>4 Sem Hrs</b>
Prerequisite: MATH LEVEL 5. Includes fundamental concepts of algebra and applications, equation solving, graphs, systems of linear equations, quadratic equations, algebraic fractions, exponents, radicals, functions, and logarithms. Credit may be earned in MTH 119 or MTH 119A, but not both. A GRAPHING CALCULATOR IS REQUIRED. (60-0)		
<b>MTH 120</b>	<b>Finite Mathematics</b>	<b>3 Sem Hrs</b>
Prerequisite: MTH 119 or MTH 119A with a grade of "C" or better or two years of high school algebra. Includes topics of mathematical modeling (polynomial and rational functions; their graphs and applications; and arithmetic and geometric progressions), systems of equations and inequalities, linear programming, and an introduction to probability (binomial distributions and graphing qualitative data). Covers computer applications of some topics. A GRAPHING CALCULATOR IS REQUIRED. (Those students planning to take MTH 161 should take MTH 151 rather than MTH 120.) (45-0)		

<b>MTH 121</b>	<b>Plane Trigonometry</b>	<b>3 Sem Hrs</b>
Prerequisite: MTH 119 or MTH 119A with a grade of "C" or better or two years of high school algebra. Includes trigonometric functions and their graphs, solution of triangles, identities, trigonometric equations, inverse trigonometric functions, and complex numbers. A GRAPHING CALCULATOR IS REQUIRED. (45-0)		
<b>MTH 122</b>	<b>College Algebra</b>	<b>4 Sem Hrs</b>
Prerequisite: MATH LEVEL 6. Reviews the mechanics of basic Algebra and solidifies understanding by using algebraic techniques, constructing mathematical models, solving problems and interpreting results. Includes: algebraic expressions; equations and inequalities; functions, inverse functions, and graphs; polynomial and rational functions; radical functions; exponential and logarithmic functions; matrices and determinants; systems of equations and inequalities; complex numbers; sequences and series. A GRAPHING CALCULATOR IS REQUIRED. (60-0)		
<b>MTH 151</b>	<b>Pre-Calculus Mathematics</b>	<b>4 Sem Hrs</b>
Prerequisite: MTH 119 or MTH 119A and MTH 121 with grades of "C" or better or three years of high school college-preparatory mathematics including trigonometry. MTH 121 may be taken concurrently with instructor approval. Designed for students planning to take calculus. Includes a study of the elementary functions, equations and inequalities, systems of equations, review of trigonometry, and analytic geometry. A GRAPHING CALCULATOR IS REQUIRED. (60-0)		
<b>MTH 153</b>	<b>Algebra for Calculus</b>	<b>3 Sem Hrs</b>
Prerequisites: Two years of high school algebra and permission of the instructor. Provides a review of algebra as related to calculus topics of limits, differentiation, and integration. (45-0)		
<b>MTH 160</b>	<b>Calculus for the Social and Managerial Sciences</b>	<b>4 Sem Hrs</b>
Prerequisite: MTH 120 or MTH 151 with a grade of "C" or better or at least three and a half years of high/ school-college preparatory mathematics. Satisfies the mathematics requirements for students majoring in business or social sciences. Covers topics include graphing, differentiation and integration of functions (algebraic, exponential, and logarithmic), and the use of these techniques within business and economic models. A GRAPHING CALCULATOR IS REQUIRED. (60-0)		
<b>MTH 161</b>	<b>Analytic Geometry and Calculus I</b>	<b>4 Sem Hrs</b>
Prerequisite: MTH 151 with a grade of "C" or better or four years of high school college-preparatory mathematics including trigonometry. Includes functions, graphs, limits, continuity, derivatives and their applications, integrals, as well as differentiation and integration of exponential and logarithmic functions. A GRAPHING CALCULATOR IS REQUIRED. (60-0)		
<b>MTH 162</b>	<b>Analytic Geometry and Calculus II</b>	<b>4 Sem Hrs</b>
Prerequisite: MTH 161 with a grade of "C" or better. Includes applications of integrals, integration techniques, limits and indeterminate forms, improper integrals, infinite series, polar coordinates, parametric equations, as well as differentiation and integration of trigonometric and hyperbolic functions. A TI 89 GRAPHING CALCULATOR IS REQUIRED. (60-0)		
<b>MTH 208</b>	<b>Elementary Statistics</b>	<b>3 Sem Hrs</b>
Prerequisite: MTH 118 or MTH 119 or MTH 119A with a grade of "C" or better or two years of high school algebra. Studies statistical concepts including frequency distributions, measures of central tendency and dispersion, probability, confidence intervals, hypotheses testing, linear correlation and regression, chi-square, ANOVA. A SPECIFIC GRAPHING CALCULATOR IS REQUIRED. (45-0)		
<b>MTH 260</b>	<b>Discrete Mathematics</b>	<b>3 Sem Hrs</b>
Prerequisite: MTH 161 with a grade of "C" or better. Introduces discrete mathematics topics for applied mathematics and computer science. Includes Boolean algebra, predicate logic, sets, relations, induction and recursion, counting theory, graphs and trees. (45-0)		

**MTH 261 Analytic Geometry and Calculus III 4 Sem Hrs**  
Prerequisite: MTH 162 with a grade of "C" or better. Includes solid analytical geometry, vectors, partial differentiation, multiple integration, line and surface integrals, Green's, Stokes', and Gauss' theorems. A CAS GRAPHING CALCULATOR IS REQUIRED. (60-0)

**MTH 263 Introduction to Linear Algebra 3 Sem Hrs**  
Prerequisite: MTH 261 with a grade of "C" or better. Investigates matrices, determinants, linear systems, vector spaces, linear transformations, eigenvalues, and eigenvectors. (45-0)

**MTH 264 Introduction to Ordinary Differential Equations 3 Sem Hrs**  
Prerequisite: MTH 261 with a grade of "C" or better. Studies the techniques for solving first and second-order differential equations and first-order systems of differential equations both linear and nonlinear, through qualitative, quantitative and numerical approaches. Includes Laplace transforms and uses applications in science and engineering throughout the course. (45-0)

**MTH 290-299 Special Projects in Mathematics**

## Massage Therapy

**MTP 290-299 Special Projects in Massage Therapy**

**MTP 301 Manual Techniques I 6 Sem Hrs**  
Prerequisites: Licensed Practical Nurse or Licensed Registered Nurse through the State of Michigan, or, Graduate of a fully accredited Physical Therapist Assistant Program in the State of Michigan. Out of state applicants must provide confirmation of above requirements. Provides an in-depth view of the history, theory, terminology, physiology, pathology, and basic techniques of both Western and Eastern medical models used during the stages of rehabilitation. Covers aspects of ethics, law, business, and marketing, and develops students use and integration of structural-based and energy-based body systems. Includes Swedish massage, structural-based massage, Myofascial release, trigger point therapy, traditional Chinese medicine, acupressure, shiatsu, reflexology, and other advanced techniques. (90-0)

## Music

**MUS 100 Elements of Music 3 Sem Hrs**  
Rudiments of music, including notation, clefs, keys, syllables, and rhythm. Elementary conducting technique. Planned to meet the basic musical needs of prospective elementary teachers. Also is a basic course in beginning theory for anyone interested in music. Recommended to be taken concurrently with MUS 131. (45-0)

**MUS 111 Music Appreciation I 3 Sem Hrs**  
Provides fundamentals of listening to and understanding of instrumental music (concerto, small ensemble). Presents basic principles for discussion as they relate to a variety of examples from classical, folk, and pop styles. (45-0)

**MUS 112 Music Appreciation II 3 Sem Hrs**  
Prerequisite: MUS 111 or permission of instructor. Continued study of instrumental music (concerto small ensemble). Promotes an understanding of and for vocal forms (Opera, art, song, large choral work, i.e., oratorios, masses). (45-0)

**MUS 118 Jazz History: Origins to the Present 3 Sem Hrs**  
Assists students in developing an interest in and respect for Jazz as an original American art form. Traces Jazz history from its theoretical origins to the present. Focuses on the evolutionary development of the music and the artists who brought about Jazz. (45-0)

**MUS 119 The History of Rock and Roll: From Its Origins to 1980 3 Sem Hrs**  
Develops an interest and respect for the origins and growth of Rock and Roll music in the United States and Europe through the focus on recordings and videos that documented its progress. (45-0)

**MUS 120 World Music: Survey 3 Sem Hrs**  
Develops an interest and respect for music from different countries and cultures by tracing the development and structures of non-European music forms through a focus on recordings and artists that have documented these unique musical traditions. (45-0)

**MUS 131 Piano I 2 Sem Hrs**  
Beginning class instruction leading to the ability to play melodies and accompanying chord patterns and rhythms. (15-15)

**MUS 132 Piano II 2 Sem Hrs**  
Prerequisite: MUS 131 or permission of the instructor. Continuation of Piano I. (15-15)

**MUS 135 Fundamentals of Guitar 2 Sem Hrs**  
Introduces basic written music notation, simple chords, strumming patterns, and right hand fingerstyle patterns. Performs a variety of traditional and popular songs. Enriches music skills for students and teachers. (30-0)

**MUS 136 Contemporary Guitar Styles 2 Sem Hrs**  
Prerequisite: MUS 135 or permission of instructor. Student must provide own instrument. Utilizes rock, jazz, blues, and other songs to teach contemporary guitar styles. Uses tablature and chord charts extensively. Teaches scales and chords according to the needs of each style covered. Improvises over simple progressions in each of the above styles. (30-0)

**MUS 137 Classical Guitar 2 Sem Hrs**  
Prerequisite: MUS 135 or permission of instructor. Nylon-string classical guitars are recommended. Introduces techniques and repertoire of the classical guitar and students will perform a variety of simple repertoire pieces from different historical style periods. Emphasizes solo and ensemble playing. Teaches rest stroke, free stroke, arpeggio technique, proper posture and positioning, reading music in 2 parts, and basic expressive interpretation. (30-0)

**MUS 138 Music Voice Class 2 Sem Hrs**  
Emphasizes the vocal instrument and how it functions in singing. Practices techniques to improve the voice, rehearsing in both ensemble and solo settings, culminating in class performance at the end of the semester. Teaches vocal terminologies and explores a variety of musical styles. (30-0)

**MUS 154 Choir I 2 Sem Hrs**  
Provides an opportunity for ensemble singing in 2, 3, 4, or more parts. Develops repertoire, musicianship, and proper vocal techniques through reading choral music, extending vocal range, pitch matching, proper practice and performance techniques. (30-0)

**MUS 155 Choir II 2 Sem Hrs**  
Prerequisites: MUS 154 or Instructor permission. Provides a continuing opportunity for ensemble singing in 2, 3, 4, or more parts. Develops further repertoire, musicianship, and proper vocal techniques through reading choral music, extending vocal range, pitch matching, proper practice, and performance techniques. (30-0)

**MUS 158 Choir III 2 Sem Hrs**  
Prerequisites: MUS 155 or Instructor permission. Provides a continuing opportunity for ensemble singing in 2, 3, 4, or more parts by building on knowledge learned in previous choral experience. Develops further repertoire, musicianship, and proper vocal techniques through reading choral music, extending vocal range, pitch matching, proper practice, and performance techniques. (30-0)

**ALL APPLIED MUSIC COURSES** Prerequisite: Permission of music department. Private instructions/lessons provided and a minimum number of hours of weekly practice is required. A jury examination will be held at the end of each semester.

<b>MUS 171</b>	<b>Applied Music Piano Minor--Freshman</b>	<b>1 Sem Hr</b>
<b>MUS 172</b>	<b>Applied Music Piano Minor--Freshman</b>	<b>1 Sem Hr</b>
<b>MUS 173</b>	<b>Applied Music Instrumental Minor--Freshman</b>	<b>1 Sem Hr</b>
<b>MUS 174</b>	<b>Applied Music Instrumental Minor--Freshman</b>	<b>1 Sem Hr</b>
<b>MUS 175</b>	<b>Applied Music Voice Minor--Freshman</b>	<b>1 Sem Hr</b>
<b>MUS 176</b>	<b>Applied Music Voice Minor--Freshman</b>	<b>1 Sem Hr</b>
<b>MUS 181</b>	<b>Applied Music Piano Major--Freshman</b>	<b>2 Sem Hrs</b>
<b>MUS 182</b>	<b>Applied Music Piano Major--Freshman</b>	<b>2 Sem Hrs</b>
<b>MUS 183</b>	<b>Applied Music Instrumental Major--Freshman</b>	<b>2 Sem Hrs</b>
<b>MUS 184</b>	<b>Applied Music Instrumental Major--Freshman</b>	<b>2 Sem Hrs</b>
<b>MUS 185</b>	<b>Applied Music Voice Major--Freshman</b>	<b>2 Sem Hrs</b>
<b>MUS 186</b>	<b>Applied Music Voice Major--Freshman</b>	<b>2 Sem Hrs</b>
<b>MUS 271</b>	<b>Applied Music Piano Minor--Sophomore</b>	<b>1 Sem Hr</b>
<b>MUS 272</b>	<b>Applied Music Piano Minor--Sophomore</b>	<b>1 Sem Hr</b>
<b>MUS 273</b>	<b>Applied Music Instrumental Minor Sophomore</b>	<b>1 Sem Hr</b>
<b>MUS 274</b>	<b>Applied Music Instrumental Minor--Sophomore</b>	<b>1 Sem Hr</b>
<b>MUS 275</b>	<b>Applied Music Voice Minor--Sophomore</b>	<b>1 Sem Hr</b>
<b>MUS 276</b>	<b>Applied Music Voice Minor--Sophomore</b>	<b>1 Sem Hr</b>
<b>MUS 281</b>	<b>Applied Music Piano Major--Sophomore</b>	<b>2 Sem Hrs</b>
<b>MUS 282</b>	<b>Applied Music Piano Major--Sophomore</b>	<b>2 Sem Hrs</b>
<b>MUS 283</b>	<b>Applied Music Instrumental Major--Sophomore</b>	<b>2 Sem Hrs</b>
<b>MUS 284</b>	<b>Applied Music Instrumental Major--Sophomore</b>	<b>2 Sem Hrs</b>
<b>MUS 285</b>	<b>Applied Music Voice Major--Sophomore</b>	<b>2 Sem Hrs</b>
<b>MUS 286</b>	<b>Applied Music Voice Major--Sophomore</b>	<b>2 Sem Hrs</b>

**MUS 290-299 Special Projects in Music**

## Nursing Part Time

**NPT 101AL Nursing Fundamentals Lab 1.5 Sem Hrs**  
Prerequisite: Current validation for ADN Program - Part-time Track. Concurrent enrollment in NPT 101A. Emphasizes critical thinking related to application of specific concepts and nursing process as the framework for nursing diagnosis and practice skills. Requires mastery of specified clinical skills/procedures in a simulated laboratory setting. This lab course has a concurrent theory course. For successful completion, a grade of at least a "C" must be earned in both this course and its concurrent theory course. A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit can be earned in NPT 101AL or NUR 101AL but not both. (0-67)

**NPT 101A Nursing Fundamentals 3.5 Sem Hrs**  
Prerequisite: Current validation for ADN program - Part-time Track. Concurrent enrollment in NPT 101AL. Introduces the three AND roles of Provider of Care, Manager of Care, and Member within the Discipline of Nursing. Identifies the role of professional nursing practice based on principles of the biological and social sciences. Addresses ethical and legal responsibilities of nursing practice. This theory course has a concurrent lab course (NPT 101AL). For successful completion, a grade of at least a "C" must be earned in both this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit can be earned in NPT 101A or NUR 101A, but not both. (52-0)

**NPT 101BL Care of the Aging Adult Lab 2.0 Sem Hrs**  
Prerequisite: NPT 101A or NUR 101A and NPT 101AL or NUR 101AL with a minimum of "C" (2.0). Concurrent enrollment in NPT 101B. Applies the ADN roles of Provider of Care and Member within the Discipline of Nursing through application of the nursing process and adherence to legal and ethical aspects of nursing practice while providing nursing care for older adults in a variety of environments and health care settings. This lab course has a concurrent theory course. For successful completion, a grade of at least a "C" must be earned in both this course and its concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit can be earned in NPT 101BL or NUR 101BL, but not both. (0-92)

**NPT 101B Care of the Aging Adult 2.0 Sem Hrs**  
Prerequisite: NPT 101A or NUR 101A and NPT 101AL or NUR 101AL with a minimum grade of "C" (2.0). Concurrent enrollment in NUR 101BL. Introduces concepts of gerontological nursing. For successful completion, a grade of at least a "C" must be earned in both this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit can be earned in NPT 101B or NUR 101B, but not both. (30-0)

**NPT 115L Maternity Nursing Lab 1 Sem Hr**  
Prerequisite: NPT 101B or NUR 101B and NPT 101BL or NUR 101BL with minimum grade of "C" (2.0). Concurrent enrollment in NPT 115. Provides clinical opportunities to apply the ADN roles of Provider of Care and Member within the Discipline of Nursing in the Maternity Health Care setting and introduces the fundamental skills needed to function in the Manager of Care role. Requires a concurrent theory course (NPT 115). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit may be earned in NPT 115L or NUR 115L, but not both. (0-45)

**NPT 115 Maternity Nursing 2 Sem Hrs**  
Prerequisite: NPT 101B or NUR 101B and NPT 101BL or NUR 101BL with minimum grade of "C" (2.0). Concurrent enrollment in NPT 115L, NPT 116, and NPT 116L. Concurrent enrollment in NPT 115LW. Presents nursing care of the childbearing family. Focus on distinguishing normal from abnormal conditions and interventions to promote a safe, satisfying childbirth experience. Requires a concurrent lab course (NPT 115L). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit can be earned in NPT 115 or NUR 115, but not both. (30-0)

**NPT 116L Pediatric Nursing lab 1 Sem Hr**  
Prerequisite: NPT 101B or NUR 101B and NPT 101BL or NUR 101BL with a minimum grade of "C" (2.0). Concurrent enrollment in NPT 116. Provides clinical opportunities to apply the ADN roles of Provider of Care and Member within the Discipline of Nursing in the Pediatric Health Care setting and introduces the fundamental skills needed to function in the Manager of Care role. Requires a concurrent theory course (NPT 116). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit can be earned in NPT 116L or NUR 116L, but not both. (0-45)

**NPT 116 Pediatric Nursing 2 Sem Hrs**

Prerequisite: NPT 101B or NUR 101B and NPT 101BL or NUR 101BL with a minimum grade of "C" (2.0). Concurrent enrollment in NPT 116L. Presents nursing care of the child and family experiencing illness/hospitalization. Emphasis on principles of growth and development, and bio-psycho-social needs of clients from infancy through adolescence. Requires a concurrent lab course (NPT 116L). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit can be earned in NPT 116 or NUR 116, but not both. (30-0)

**NPT 119L Mental Health Nursing Lab 1 Sem Hr**

Prerequisite: NPT 101B or NUR 101B and NPT 101BL or NUR 101BL with a minimum grade of "C" (2.0). Concurrent enrollment in NPT 119. Provides clinical opportunities to apply the ADN roles of Provider of Care and Member within the Discipline of Nursing in selected health care/mental health agencies and introduces the fundamental skills needed to function in the Manager of Care role. Requires a concurrent theory course (NPT 119). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit may be earned in NPT 119L or NUR 119L, but not both. (0-45)

**NPT 119 Mental Health Nursing 2 Sem Hrs**

Prerequisite: NPT 101B or NUR 101B and NPT 101BL or NUR 101BL with a minimum grade of "C" (2.0). Concurrent enrollment in NPT 119L. Presents nursing care of clients and their families experiencing emotional distress/mental illness. Requires a concurrent lab course (NPT 119L). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit may be earned in NPT 119 or NUR 119, but not both. (30-0)

**NPT 240L Basic Nursing Care of the Adult Client Lab 4.3 Sem Hrs**

Prerequisite: NPT 115, NPT 116, and NPT 119 or NUR 115, NUR 116, and NUR 119 and NPT 115L, NPT 116L, and NPT 119L or NUR 115L, NUR 116L, and NUR 119L with a minimum grade of a "C" (2.0). Concurrent enrollment in NPT 240. Applies the nursing process in caring for the adult patient and requires clinical application of concepts in an acute care setting. Provides opportunities to apply the ADN roles of Provider of Care, Manager of Care, and continues to build on the role as a Member within the Discipline of Nursing. This lab course has a concurrent theory course. For successful completion, a grade of at least a "C" must be earned in both this course and the concurrent theory course (lab grade will be same as theory course). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit may be earned in NPT 240L or NUR 240L, but not both. (0-195)

**NPT 240 Basic Nursing Care of the Adult Client 4.7 Sem Hrs**

Prerequisite: NPT 115, NPT 116, and NPT 119 or NUR 115, NUR 116, and NUR 119 and NPT 115L, NPT 116L, and NPT 119L or NUR 115L, NUR 116L, and NUR 119L with a minimum grade of a "C" (2.0). Concurrent enrollment in NPT 240L. Presents health care problems related to alterations in hematology, cardiopulmonary, endocrine, musculoskeletal, gastrointestinal, renal, reproductive, perioperative, and neuro function with emphasis on critical thinking in basic to complex nursing care. For successful completion, a grade of at least a "C" must be earned in both this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit may be earned in NPT 240 or NUR 240, but not both. (70-0)

**NPT 250L Nursing Care and Management Throughout the Health Continuum Lab 5 Sem Hrs**

Prerequisite: NPT 240, NUR 240, or NT 219 and NPT 240L, NUR 240L or NT 219L with a minimum grade of "C" (2.0). Concurrent enrollment in NPT 250. This course will provide an opportunity to enhance nursing practice skills through managing nursing care of a group of hospitalized clients. Emphasizes concepts, principles, and skills of the three ADN roles of Provider of Care, Manager of Care, and Member within the Discipline of Nursing necessary for entry level nursing practice. Requires a concurrent theory course (NPT 250). For successful completion, a grade of at least a "C" must be earned in both this course and its concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit may be earned in NPT 250L or NUR 250L, but not both. (0-225)

**NPT 250 Nursing Care and Management Throughout the Health Continuum 4 Sem Hrs**

Prerequisite: NPT 240 or NUR 240 or NT 219 and NPT 240L or NUR 240L or NT 219L with minimum grade of "C" (2.0). Concurrent enrollment in NPT 250L. This course will provide opportunities to enhance nursing practice skills through managing nursing care of a group of hospitalized clients having acute cardiovascular, respiratory, renal, and multisystem dysfunction, as well as clients facing trauma, cancer, immunologic dysfunction, shock, and hemodynamic instability. Requires a concurrent lab course (NPT 250L). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit may be earned in NPT 250 or NUR 250, but not both. (60-0)

**NPT 290-299 Special Projects in Nursing RN Part Time****Nursing Transition****NT 160L Transitional Skills and Concepts Lab 1.0 Sem Hr**

Prerequisite: Completion of NT 161 and NT 162 with a minimum grade of "C" (2.0). Concurrent enrollment in NT 160. Provides opportunities to practice specific nursing procedures in a simulated and clinical laboratory setting. Requires demonstration of skill competencies and documentation for successful course completion. This lab course has a concurrent theory course. For successful completion, a grade of at least a "C" must be earned in this course and the concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (0-45)

**NT 160 Transitional Skills and Concepts 1.0 Sem Hr**

Prerequisite: Completion of NT 161 and NT 162 with a minimum grade of "C" (2.0). Concurrent enrollment in NT 160L. Focuses on basic nursing skills/procedures and related communication necessary for function in the ADN Provider of Care role. This theory course has a concurrent lab course. For successful completion, a grade of at least a "C" must be earned in this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (15-0)

**NT 161 Transition - Basic Principles of Adult Care 2 Sem Hrs**

Prerequisite: LPN or Paramedic Licensure, 1 year full time equivalent work experience and validation for Transition program. (LPN option: no work experience required if student has maintained a GPA of 3.0 or greater throughout the ADN prerequisite core courses and PNE clinical courses, and meets all other prerequisite requirements.) Solidifies knowledge of the Provider of Care role related to aseptic technique, nutritional requirements, medication administration, fluid and electrolyte regulation, and acid-base balance. (30-0)

**NT 162      Role and Function of the RN      2 Sem Hrs**  
 Prerequisite: LPN or Paramedic Licensure, 1 year full time equivalent work experience and validation for Transition program. (LPN option: no work experience required if student has maintained a GPA of 3.0 or greater throughout the ADN prerequisite core courses and PNE clinical courses, and meets all other prerequisite requirements.) Introduces the three roles of the ADN: Provider of Care, Manager of Care, and Member within the Discipline of Nursing. Discusses the history of nursing, nursing theorists, and social policy. Emphasizes communication, ethical and legal implications for nursing, education preparation for various nursing roles, image of nursing, political action, theories and models of practice, teaching/learning principles, concepts of ethnic, and cultural diversity. (30-0)

**NT 163L      Advanced principles of Adult Care for the LPN/Licensed Paramedic      3 Sem Hrs**  
 Prerequisite: NT 161 and NT 162 with minimum grade of "C" (2.0) for both LPNs and Paramedics; NT 160 and NT 160L for Paramedics with minimum grade of "C" (2.0). Concurrent enrollment in NT 163. Applies the nursing process in caring for the adult patient and requires clinical application of concepts in an acute care setting. Provides opportunities to apply the ADN roles of Provider of Care, Manager of Care, and continues to build on role functions as a Member within the Discipline of Nursing. This lab course has a concurrent theory course. For successful completion, a grade of at least a "C" must be earned in both this course and its concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (0-135)

**NT 163      Advanced Principles of Adult Care for the LPN/Licensed Paramedic      3 Sem Hrs**  
 Prerequisite: NT 161 and NT 162 with minimum grade of "C" (2.0). Concurrent enrollment in NT 163L. Presents health care problems related to alterations in hematology, cardiopulmonary, endocrine, reproductive, perioperative, musculoskeletal, gastrointestinal, renal, and neuro function with emphasis on critical thinking in basic to complex nursing care. For successful completion, a grade of at least a "C" must be earned in both this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (45-0)

**NT 215L      Transition-Maternity Nursing Lab      1 Sem Hr**  
 Prerequisite: NT 163 and NT 163L with a minimum grade of "C" (2.0). Concurrent enrollment in NT 215. Provides clinical opportunities to apply the ADN roles of Provider of Care and Member within the Discipline of Nursing in the maternity health care setting and introduces the fundamental skills needed to function in the Manager of Care role. Requires a concurrent theory course (NT 215). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent theory course. A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (0-45)

**NT 215      Transition-Maternity Nursing      2.0 Sem Hrs**  
 Prerequisite: NT 163 and NT 163L with a minimum grade of "C" (2.0). Concurrent enrollment in NT 215L. Presents nursing care of the childbearing family. Focuses on distinguishing normal from abnormal conditions and interventions to promote a safe, satisfying childbirth experience. Requires a concurrent lab course (NT 215L). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (30-0)

**NT 216L      Transition-Pediatric Nursing Lab      1 Sem Hr**  
 Prerequisite: NT 163 and NT 163L with a minimum grade of "C" (2.0). Concurrent enrollment in NT 216. Provides clinical opportunities to apply the AND role of Provider of Care and Member within the Discipline of Nursing in the Pediatric Health Care setting and introduces the fundamental skills needed to function in the Manager of Care role. Requires a concurrent theory course (NT 216). For successful completion a grade of at least a "C" must be earned in this course and its concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (0-45)

**NT 216      Transition-Pediatric Nursing      2 Sem Hrs**  
 Prerequisite: NT 163 and NT 163L with a minimum grade of "C" (2.0). Concurrent enrollment in NT 216L. Presents nursing care of the child and family experiencing illness/hospitalization. Emphasizes principles of growth and development, and bio-psycho-social needs of clients from infancy through adolescence. Requires a concurrent lab course (NT 216L). A grade of at least a "C" must be earned in this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (30-0)

**NT 219L      Transition-Mental Health Nursing Lab      1 Sem Hr**  
 Prerequisite: NT 163 and NT 163L with a minimum grade of "C" (2.0). Concurrent enrollment in NT 219. Provides clinical opportunity to apply the AND roles of Provider of Care and Member Within the Discipline of Nursing in selected health care/mental health agencies and introduces the fundamental skills needed to function in the manager of Care role. Requires a concurrent theory course (NT 219). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent theory course (lab grade will be same as theory course). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (0-45)

**NT 219      Transition-Mental Health Nursing      2 Sem Hrs**  
 Prerequisite: NT 163 and NT 163L with a minimum grade of "C" (2.0). Concurrent enrollment in NT 219L. Presents nursing care of clients and their families experiencing emotional distress/mental illness. Requires a concurrent lab course (NT 219L). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (30-0)

#### **NPT 290-299      Special Projects in Nursing RN Part Time**

### **Nursing RN Full Time**

**NUR 100A      Introduction to Nursing Careers      1 Sem Hr**  
 Provides strategies and skills to enhance success within Delta's nursing program. Emphasizes critical thinking, time management, and learning styles. Includes overview of nursing's past and present, and challenges for the future. Credit may be earned in NUR 100 or NUR 100A, but not both. (15-0)

**NUR 101AL      Nursing Fundamentals Lab      1.5 Sem Hrs**  
 Prerequisite: Current validation for ADN program - Full-time Track. Concurrent Enrollment in NUR 101A. Emphasizes critical thinking related to application of specific concepts and nursing process as the framework for nursing diagnosis and practice skills. Requires mastery of specified clinical skills/procedures in a simulated laboratory setting. This lab course has a concurrent theory course. For successful completion, a grade of at least "C" must be earned in both this course and its concurrent theory course. A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit may be earned in NUR 101AL or NPT 101AL but not both. (0-67)

**3.5 Sem Hrs**

**NUR 101BL    Care of the Aging Adult Lab**

**2.0 Sem Hrs**

**NUR 101B      Care of the Aging Adult**

**2.0 Sem Hrs**

**NUR 115L      Maternity Nursing Lab**

**1 Sem Hr**

**NUR 115      Maternity Nursing**

2 Sem Hrs

**NUR 116L      Pediatric Nursing Lab**

1 Sem Hr

**NUR 116      Pediatric Nursing**

2 Sem Hrs

**NUR 119L      Mental Health Nursing Lab**

1 Sem Hr

**NUR 119      Mental Health Nursing**

2 Sem Hrs

**NUR 240L      Basic Nursing Care of the Adult Client Lab**

### 4.3 Sem Hrs

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**NUR 240 Basic Nursing Care of the Adult Client 4.7 Sem Hrs**

Prerequisite: NUR 115, NUR 116, NUR 119 or NPT 115, NPT 116, NPT 119 and NUR 115L, NUR 116L, NUR 119L or NPT 115L, NPT 116L, NPT 119L with minimum grade of a "C" (2.0). Concurrent enrollment in NUR 240L. Presents health care problems related to alterations in hematology, cardiopulmonary, endocrine, musculoskeletal gastrointestinal, renal, reproductive, perioperative, and neuro function with emphasis on critical thinking in basic to complex nursing care. For successful completion, a grade of at least a "C" must be earned in both this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit may be earned in NUR 240 or NPT 240, but not both. (70-0)

**NUR 250L Nursing Care and Management Throughout the Health Continuum Lab 5 Sem Hrs**

Prerequisite: NUR 240 or NPT 240 or NT 219 and NUR 240L or NPT 240L, or NT 219L with minimum grade of "C" (2.0). Concurrent enrollment in NUR 250. Provides an opportunity to enhance nursing practice skills through managing nursing care of a group of hospitalized clients. Emphasizes concepts, principles, and skills of the three ADN roles of Provider of Care, Manager of Care, and Member within the Discipline of Nursing necessary for entry level nursing practice. Requires a concurrent theory course (NUR 250). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit may be earned in NUR 250L or NPT 250L, but not both. (0-225)

**NUR 250 Nursing Care and Management Throughout the Health Continuum 4 Sem Hrs**

Prerequisite: NUR 240 or NPT 240 or NT 219 and NUR 240L, NPT 240L, or NT 219L with minimum grade of "C" (2.0). Concurrent enrollment in NUR 250L. Provides opportunities to enhance nursing practice skills through managing nursing care of a group of hospitalized clients having acute cardiovascular, respiratory, renal, and multi-system dysfunction, as well as clients facing trauma, cancer, immunologic dysfunction, shock, and hemodynamic instability. Requires a concurrent lab course (NUR 250L). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. Credit can be earned in NUR 250 or NPT 250, but not both. (60-0)

**NUR 290-299 Special Projects in Nursing**

**Office Administration & Technology**

**OAT 105 Time Management 1 Sem Hr**

Explores the principles of effective time and life management. Develops skills in time management using a traditional paper planner as well as an electronic calendar. (15-0)

**OAT 116 Introduction to the Medical Office 2 Sem Hrs**

Prerequisite: MATH LEVEL 2. Introduces the pegboard system including day sheets, patient ledgers and receipts; emphasizes the accurate recording of charges, payments and adjustments. Includes introduction of basic accounting procedures including journalizing, posting, banking, payroll, and preparation of the income statement and balance sheet. Credit may be earned in OSE 116 or OAT 116 but not in both. (30-0)

**OAT 150 Business English 3 Sem Hrs**

Prerequisite: READING LEVEL 4 and WRITING LEVEL 3. Emphasizes the development of sound English usage skills. Emphasizes language skills that will enable students to perform effectively and efficiently in an information-based work environment. Credit may be earned in OSE 150 or OAT 150 but not in both. (45-0)

**OAT 151 Business Communication I 3 Sem Hrs**

Prerequisite: READING LEVEL 5B and WRITING LEVEL 4B. Includes principles and composition of effective basic business letters and memos as well as accuracy in grammar, spelling, punctuation, sentence structure, and format. Keyboarded assignments are required. (45-0)

**OAT 152 Business Communication II 3 Sem Hrs**

Prerequisite: Business Communication I (OAT 151 or OSE 151) with a C (2.0) grade minimum. Studies effective verbal and nonverbal communication in business. Emphasizes audience reaction, logical organization, tone, clarity, and accuracy. Involves career information, the research process, and reporting. Credit may be earned in OSE 152 or OAT 152 but not in both. (45-0)

**OAT 153 Police Report Writing 1 Sem Hr**

Concurrent enrollment in CJ 101, LWT 175, and LW 280. Requires a grade of "C" (2.0) or better to complete the Basic Police Training Academy. Develops and enhances writing skills necessary to law enforcement including preparation of police reports, incident reports, summaries of witness and complaint interviews, and criminal case summaries. Credit may be earned in OSE 153 or OAT 153 but not in both. (15-0)

**OAT 155 Editing 2 Sem Hrs**

Prerequisite: OAT 151 and OAT 171 or demonstrated keyboarding skills. Develops proofreading and editing skills. Reviews business writing principles and the use of revision symbols. Emphasizes revising both format and content of business documents. Requires a service learning experience. (30-0)

**OAT 157 File Management 2 Sem Hrs**

Prerequisite: OAT 170 Keyboarding with a "C" (2.0) grade minimum or equivalent touch typing and computer background. Covers principles and practices of effective records management for manual and automated records systems using alphabetic, numeric, chronologic, and subject methods. Introduces database concepts needed for understanding automated records storage and retrieval methods including adding, modifying, sorting, designing, searching and printing. Credit may be earned in OSE 157 or OAT 157 but not in both. (30-0)

**OAT 166 Office Internship 3 Sem Hrs**

(Prerequisite: Minimum 25 credits completed in Administrative Assistant program. Student must apply for placement in OAT 166 in semester previous to anticipated placement.) Integrates and reinforces the student's academic studies with related work of at least 180 hours at a designated work site. Seminars will be held on campus as a forum of discussion for career enhancement. (15-180)

**OAT 170 Keyboarding 2 Sem Hrs**

Develops the touch system of the alphabetic, numeric, symbol keys and the 10-key pad of the microcomputer keyboard. Credit may be earned in OSE 170 or OAT 170 but not in both. A waiver test is available for those who are proficient in typing. (30-0)

**OAT 171 Document Processing: Beginning 3 Sem Hrs**

Prerequisite: OAT 170 Keyboarding with "B" grade or better or equivalent computer background with accurate touch typing speed of at least 25 words per minute. Uses MS Word to introduce the formatting of business correspondence, reports, and tables. Develops speed and accuracy on the computer keyboard. (45-0)

**OAT 172 Document Processing: Intermediate 3 Sem Hrs**

Prerequisite: OAT 171 with a "C" (2.0) grade minimum or equivalent. Studies the efficient use of MS Word for the production of complex business correspondence, reports, and tables. Introduces the use of appropriate punctuation in business documents. Increases speed and accuracy on the computer keyboard. (45-0)

**OAT 175 Electronic Calculation 2 Sem Hrs**

Prerequisite: MATH LEVEL 2. Develops the touch system of data entry for addition and incorporates the functions of addition, subtraction, multiplication, and division for various business applications using electronic calculating tools. Credit may be earned in OAT 175 or OSE 175 but not in both. (30-0)

**OAT 243 Diagnostic Coding 3 Sem Hrs**

Prerequisite: HSC 105 and BIO 101W (or BIO 101 equivalent: BIO 140, or BIO 152 and 153, or BIO 171 and 172, or BIO 240 and 241). Presents diagnosis as it relates to physicians' health insurance claims processing; includes decision making necessary for accurate diagnosis code choices, abstracting diagnosis from health care documentation, and using the ICD-9-CM diagnosis coding system. Course may be taken concurrently with OAT 244 Procedure Coding. (45-0)

**OAT 244 Procedure Coding 3 Sem Hrs**

Prerequisite: HSC 105 and BIO 101W (or BIO 101 equivalent: BIO 140, or BIO 152 and 153, or BIO 171 and 172, or BIO 240 and 241). Presents procedure as it relates to physicians' health insurance claims processing; includes decision making necessary for accurate procedure code choices, abstracting procedure from health care documentation, and using CPT and HCPCS procedure coding systems. Course may be taken concurrently with OAT 243 Diagnostic Coding. (45-0)

**OAT 254 Medical Insurance I 3 Sem Hrs**

Prerequisite: OAT 243 and OAT 244; or OAT 250 with a minimum grade of C (2.0) or permission of instructor. Includes diagnostic and procedure coding, basic insurance concepts, and terminology used by health insurance carriers. Includes insurance claims for the major insurance carriers. (45-0)

**OAT 255 Medical Insurance II 3 Sem Hrs**

Prerequisite: OAT 254 with a minimum grade of C (2.0) or permission of instructor. Studies Michigan Insurance claims processing including case study, coordination of benefits, adjustments, deductibles, co-pays, posting of payments and resolution of reimbursement problems. Includes insurance claims for the major insurance carriers.

**OAT 260 Medical Transcription: Beginning 3 Sem Hrs**

Prerequisite: OAT 172, HSC 105, and one of the following: BIO 101, BIO 131, BIO 132, BIO 140, BIO 152, BIO 153, BIO 160, or BIO 240; all with a minimum grade of "C" (2.0). Introduces cassette transcription machine operation and microcomputer to record physicians' dictation of medical progress notes, operative reports, letters, and miscellaneous medical documents. Incorporates extensive practice and application of medical terminology, spelling, grammar, punctuation, and capitalization. Uses various medical form formats. Credit may be earned in OAT 260 or OSE 260 but not in both. (45-0)

**OAT 262 Medical Transcription: Intermediate 3 Sem Hrs**

Prerequisites: OAT 260 or OSE 260 or OSE 276 with a minimum grade of C (2.0). Develops increasing proficiency in medical transcription skills through the use of progressively more complex material and an emphasis on student self reliance in the production of accurate and/or mailable medical documents. (45-0)

**OAT 266 Medical Office Practice 4 Sem Hrs**

Prerequisites: OAT 151 or OSE 151, OAT 172, OAT 254, and OAT 260 or OSE 260 or OSE 276 with a C (2.0) grade minimum. Integrates medical office correspondence, reports, billing, appointments, medical records, medical-legal issues, priority setting, and electronic medical office management. Stresses job-task analysis and human relations. (60-0)

**OAT 268 Administrative Office Practices 3 Sem Hrs**

Prerequisites: OAT 151, OAT 172, CST 151, CST 257, and CST 147 with a C (2.0) grade minimum. Develops advanced office skills through the integration of MS Office programs and the use of Internet, e-mail, and electronic calendaring activities. Provides opportunities for problem solving, decision-making, and teamwork. (45-0)

**OAT 273 Document Processing: Advanced 3 Sem Hrs**

Prerequisite: OAT 172 with a "C" (2.0) grade minimum or equivalent. Develops proficiency in using the advanced features of MS Word to produce documents used in various business offices. Emphasizes the use of appropriate punctuation, grammar, and mechanics in business documents. Increases speed and accuracy on the computer keyboard. (45-0)

**OAT 285 Office Technology 3 Sem Hrs**

Prerequisite: Minimum of 25 credit hours completed in Administrative Assistant program or permission of instructor. Introduces students to technological innovations in business and industry. Includes topics such as electronic communication, audio conferencing, video conferencing, and source document automation including voice recognition. Requires on-site visitation. (45-0)

**OAT 290-299 Special Projects in Office Administration and Technology****Philosophy****PHL 203 Business Ethics 3 Sem Hrs**

Prerequisite: READING LEVEL 4 or WRITING LEVEL 3. Serves as a foundation for the analysis of ethical conflicts arising in modern business. Develops a practical background in critical thinking, ethical decision-making, argumentation, and the justification of ethical positions. Examines concepts, case studies and topics covering issues such as employee and employer rights, the nature of profit, the nature of the capitalist system, justice, technology, privacy, due process, affirmative action, fraud, and the environment. (45-0)

**PHL 205 Media Ethics & Law 3 Sem Hrs**

Studies and analyzes various ethical and legal issues within the mass media. Develops analytical decision-making skills for resolving conflicts regarding privacy, confidentiality, freedom of speech, and media responsibility within the areas of television and radio broadcasting, print media, advertising and computer based information systems. (45-0)

**PHL 207 Engineering Ethics 1 Sem Hr**

Provides a foundation for the study and analysis of various ethical issues and dilemmas within the engineering profession. Develops analytical decision-making skills for resolving ethical conflicts. Studies topics such as ethical standards versus legal standards, safety hazards, whistle blowing, disclosure of information, professionalism, enhancement of human welfare through engineering competence and individual ethics versus job security. (15-0)

**PHL 210 Information Technology Ethics & Law 2 Sem Hrs**

Studies and analyzes ethical and legal issues in computing and the information technology industry. Develops analytical decision-making skills for issues including intellectual property, product piracy, copyright laws, pertinent court decisions, privacy and security, and software product quality. Includes special issues related to use of the Internet for information technology professionals. (30-0)

**PHL 211 Introduction to Philosophy 3 Sem Hrs**

Prerequisite: READING LEVEL 4 or WRITING LEVEL 3. Introduces the logic of philosophical thinking and to important philosophical issues. Covers such topics as proofs for the existence of God, the ultimate nature of reality, what it means to be human, and the nature of ethics. Presents historically important Western and non-Western philosophers and their theories. Allows opportunities to read about, discuss, analyze and write about course topics. Emphasizes understanding the issues, learning the various positions and arguments taken by philosophers, critically questioning those positions and arguments, and finally, reaching and defending personal philosophical conclusions. Credit may be earned in PHL 211 or PHL 211H but not in both. (45-0)

**PHL 211H Introduction to Philosophy - Honors 3 Sem Hrs**  
 Prerequisite: READING LEVEL 5 and WRITING LEVEL 3 and permission of the Honors Office. Introduces the logic of philosophical thinking and to important philosophical issues. Covers such topics as proofs for the existence of God, the ultimate nature of reality, what it means to be human, and the nature of ethics. Presents historically important Western and non-Western philosophers and their theories. Allows opportunities to read about, discuss, analyze and write about course topics. Emphasizes understanding the issues, learning the various positions and arguments taken by philosophers, critically questioning those positions and arguments, and finally, reaching and defending personal philosophical conclusions. Provide opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in PHL 211 or PHL 211H but not in both. (45-0)

**PHL 213H Introduction to Ethics - Honors 3 Sem Hrs**  
 Prerequisite: READING LEVEL 5 and WRITING LEVEL 3 and permission of the Honors Office. Introduces historically important ethical issues, theories, concepts and philosophers. Teaches the basics of ethical decision-making and how to apply ethical concepts, theories and methods to their own personal ethical conflicts. Allows the opportunity to investigate, write about, and discuss controversial topics such as abortion, capital punishment, euthanasia, assisted suicide, social justice, affirmative action, sexuality, and environmental ethics. Emphasizes understanding and critically questioning the theories, positions and arguments made concerning the course topics, and to reach and defend their own conclusions on those topics. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in PHL 213 or PHL 213HW but not in both. (45-0)

**PHL 213 Introduction to Ethics 3 Sem Hrs**  
 Prerequisite: READING LEVEL 4 or WRITING LEVEL 3. Introduces historically important ethical issues, theories, concepts and philosophers. Teaches the basics of ethical decision-making and how to apply ethical concepts, theories and methods to their own personal ethical conflicts. Allows the opportunity to investigate, write about, and discuss controversial topics such as abortion, capital punishment, euthanasia, assisted suicide, social justice, affirmative action, sexuality, and environmental ethics. Emphasizes understanding and critically questioning the theories, positions and arguments made concerning the course topics, and to reach and defend their own conclusions on those topics. Credit may be earned in PHL 213 or PHL 213H but not in both. (45-0)

**PHL 214 Philosophy of Religion 3 Sem Hrs**  
 Investigates the rationality of religious beliefs, and the meaning of religious practices, religious language and questions of evidence. Focuses on questions concerning proof of the existence of a deity, the problem of evil, the interpretation of mystical experience, the nature of religious faith and more. (45-0)

**PHL 215 Health Care Ethics 3 Sem Hrs**  
 Prerequisites: READING LEVEL 4 or WRITING LEVEL 3. Introduces ethical problems arising within the health care environment. Includes the identification of ethical issues, ethical decision-making using various ethical principles, and the analysis of ethical conflicts. Covers such topics as euthanasia, assisted suicide, Do Not Resuscitate (DNR) orders, definitions of death, allocation of scarce medical resources, informed consent, confidentiality, justice, access to health care and the nature of professionalism in health care. (45-0)

**PHL 221 Critical Thinking and Logic 4 Sem Hrs**  
 Development of critical thinking skills through the study of formal and informal logic. Analysis of fallacies, methods of clear argumentation, syllogisms, inductive logic, scientific method and rational decision-making. (60-0)

**PHL 225 Philosophy and Film 3 Sem Hrs**  
 Prerequisite: READING LEVEL 4 or WRITING LEVEL 3. Introduces philosophy as an academic discipline, to film as an artistic and intellectual medium, and to the relationship between them. Examines a wide variety of films, and the philosophical themes of the films may include the nature of reality, truth and knowledge, the existence of God, consciousness and identity, ethics, political theory, race and gender, and death. Emphasizes the interpretation, evaluation, and discussion of the philosophical aspects of films. Develops the ability to view film and other visual media with greater sophistication, and to defend personal analyses of film and philosophy, both orally and in writing. (45-0)

**PHL 230 Bioethics for Nursing 2 Sem Hrs**  
 Addresses basic ethical concepts, principles, justification, and reasoning. Applies them to ethical issues and cases involving professionalism, confidentiality, veracity, paternalism, informed consent in the context of nursing. (30-0)

**PHL 240H Social and Political Theory - Honors 3 Sem Hrs**  
 Prerequisites: LEVEL 5 READING and LEVEL 3 WRITING and permission of the Honors office. Examines past and present political and social systems from theoretical perspective. Entails comparison and evaluation of major ideologies and philosophies of the relationship of individuals to political and social institutions. Political systems such as socialism, communism, fascism, anarchism and liberalism will be explored. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in one of the following: PHL 240HW or PHL 240W or POL 240. (45-0)

**PHL 240 Social and Political Theory 3 Sem Hrs**  
 Examines past and present political and social systems from theoretical perspective. Entails comparison and evaluation of major ideologies and philosophies of the relationship of individuals to political and social institutions. Political systems such as socialism, communism, fascism, anarchism and liberalism explored. Credit may be earned in PHL 240 or POL 240 but not in both. (45-0)

**PHL 250 Philosophy of Science and Technology 3 Sem Hrs**  
 Investigates the nature of science as social process and as product; the nature and role of creativity in scientific and technological research; the influence of society and politics on technology and scientific thinking and research; the uses of technology; myths about science and technology; the role of inductive and deductive logic in the scientific process; the nature and conditions of a good test of an hypothesis and theory; the nature of scientific evidence; science as debate in process and as established knowledge. (45-0)

**PHL 255 Philosophy of Art 3 Sem Hrs**  
 Prerequisite: READING LEVEL 4 or WRITING LEVEL 3 and at least one previous Art or Philosophy course. Offers a serious philosophical investigation of the nature and value of art and theories about it. Investigates questions surrounding the history and practice of art, criticism, censorship, funding, the obligations of artists to society, the definition of art, and the standards for the evaluation of good and bad art. Develops the ability to apply classic theories to aesthetic issues and to critically assess analyses of art and aesthetics. Stresses the use of critical thinking skills in defense of personal analyses and opinions about art and aesthetic issues, both orally and in writing. (45-0)

**PHL 260H Philosophy Seminar - Honors 3 Sem Hrs**  
 Prerequisite: LEVEL 5 READING and LEVEL 3 WRITING and permission of Honors office. Students must have completed one philosophy course. Intensive examination and critical analysis of a specific philosopher's works or a specific philosophical issue within any branch of philosophy, e.g., ethics, metaphysics, epistemology, social or political philosophy. Designed as a seminar for the advanced student. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in PHL 260 or PHL 260HW but not in both. (45-0)

**PHL 260 Philosophy Seminar 3 Sem Hrs**  
 Prerequisite: Students must have completed one philosophy course. Intensive examination and critical analysis of a specific philosopher's works or a specific philosophical issue within any branch of philosophy, e.g., ethics, metaphysics, epistemology, social or political philosophy. Designed as a seminar for the advanced student. Credit may be earned in either PHL 260W or PHL 260HW but not in both. (45-0)

**PHL 290-299 Special Projects in Philosophy**

## Pharmacology

**PHM 285 Pharmacology for Health Care Professionals 3 Sem Hrs**  
 Prerequisite: Completion of BIO 152 or BIO 131 and 132 or BIO 240 and 241 with a minimum grade of C. Presents the basic foundation of pharmacology. Offers drug information in group classification format and includes drug indications, action, contraindications, side effects, implications for administration, and related client/family teaching, integrates anatomy and pathophysiology, microbiology and drug administration concepts. Credit may be earned in NUR 285 or PHM 285, but not both. (45-0)

**PHM 290-299 Special Projects in Pharmacology**

## Physics

**PHY 101 Applied Physics 4 Sem Hrs**  
 Prerequisite: MATH LEVEL 5. Introduces the basic physical principles involving mechanics, fluids, heat, conservation of energy, electricity, and sound. (60-30)

**PHY 111 General Physics I 4 Sem Hrs**  
 Prerequisites: Either trigonometry or both high school physics and MATH LEVEL 6. Examines the basic physical principles involving mechanics, heat, and sound. (60-45)

**PHY 112 General Physics II 4 Sem Hrs**  
 Prerequisites: Successful completion of PHY 111, with a minimum grade of "C" (2.0). Introduces basic physical principles involving electricity, magnetism, light, and modern physics. (60-45)

**PHY 211 Physics I 5 Sem Hrs**  
 Prerequisites: Successful completion of MTH 161, with a minimum grade of "C" (2.0). High school physics recommended. Examines the basic physical principles involving mechanics, heat, and sound. Meets the needs of Science and Engineering majors. (75-45)

**PHY 212 Physics II 5 Sem Hrs**  
 Prerequisites: Successful completion of PHY 211 and MTH 162, with a minimum grade of "C" (2.0) in each. Examines the basic physical principles involving electricity, magnetism, light, and modern physics. Meets the needs of Science and Engineering majors. (75-45)

**PHY 213 Physics of Special Relativity 2 Sem Hrs**  
 Prerequisite: MATH LEVEL 6 and "C" (2.0) minimum grade in PHY 111 or PHY 211 or Instructor's permission. Explores the implications of Einstein's Special Theory of Relativity. Includes both relativistic kinematics and dynamics. Discusses concepts of time dilation, length contraction, the famous equation  $E=mc^2$ , and standard problems such as the Twin Paradox. (30-0)

**PHY 290-299 Special Projects in Physics**

## Practical Nursing

**PNE 121L Fundamentals of Practical Nursing Lab 3 Sem Hrs**  
 Prerequisite: Current validation for PN Program. Concurrent enrollment in PNE 121. Introduces the Provider of Care role and includes opportunities to practice clinical nursing skills and techniques in the care of adults in selected clinical facilities. Introduces the Member within the Discipline of Nursing role through identification of legal and ethical considerations for the practical nurse. For successful completion, a grade of at least a "C" must be earned in both this course and its concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (0-135)

**PNE 121 Fundamentals of Nursing 6 Sem Hrs**  
 Prerequisite: Current validation for PN Program. Concurrent enrollment in PNE 121L. Focuses on the Nursing Process as applied to basic human needs, introduces concepts and theories related to holistic patient care and health education. Includes nutrition, cultural, psychosocial, basic mental health concepts and legal aspects pertaining to practical nursing. This theory course has a concurrent lab course. For successful completion, a grade of at least a "C" must be earned in this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (90-0)

**PNE 122L Care of Adult I Lab 3 Sem Hrs**  
 Prerequisite: PNE 121 and PNE 121L with a minimum grade of "C" (2.0). Concurrent enrollment in PNE 122. Provides clinical opportunities to apply the roles of Provider of Care and Member within the Discipline of Nursing while providing care for the adult medical/surgical patient. For successful completion, a grade of at least a "C" must be earned in both this course and its concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (0-135)

**PNE 122 Care of the Adult I 6 Sem Hrs**  
 Prerequisite: PNE 121 and PNE 121L with a minimum grade of "C" (2.0). Concurrent enrollment in PNE 122L. Includes the study of altered systems: respiratory, endocrine, cardiac, neuro, hematology, immune, gastrointestinal, and renal. Study of concepts related to oncology, team dynamics, fluid and electrolyte balance, communication, teaching learning, nutrition, and pre- and post-operative care. This theory course has a concurrent lab course. For successful completion, a grade of at least a "C" must be earned in this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (90-0)

**PNE 123L Care of Adult II Lab 2 Sem Hrs**  
 Prerequisite: PNE 122 and PNE 122L with a minimum grade of "C" (2.0). Focuses on application of the provider of care and member within the discipline of nursing role while providing care for a group of clients and learning group dynamics. This lab course has a concurrent theory course (PNE 123). For successful completion, a grade of at least a "C" must be earned in this course and its concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either component is not successfully completed. (0-90)

**PNE 123 Care of the Adult II 2 Sem Hrs**  
 Prerequisite: PNE 122 and PNE 122L with a minimum grade of "C" (2.0). Concurrent enrollment in PNE 123L. Focuses on care of the adult patient experiencing healing alterations related to the following systems: musculoskeletal, eye-ear, skin and reproductive. Requires a concurrent lab course. For successful completion, a grade of at least a "C" must be earned in this course and its concurrent lab course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either component is not successfully completed. (30-0)

**PNE 124AL Pediatric Nursing Lab .7 Sem Hr**  
Prerequisite: PNE 122 and PNE 122L with a minimum grade of "C". Concurrent enrollment in PNE 123 and PNE 123L. Provides clinical opportunities to apply the roles of Provider of Care and member within the Discipline of Nursing to the family during childrearing. Includes observation and selected hands-on experiences in clinical facilities. This lab course has a concurrent theory course (PNE 124A). For successful completion, a grade of at least a "C" is required in both this course and its concurrent theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both lab and theory if either course is not successfully completed. (0-31.5)

**PNE 124A Pediatric Nursing Care 1.8 Sem Hrs**  
Prerequisite: PNE 123 and PNE 123L with a minimum grade of "C" (2.0). Focuses on basic growth and development, and care of pediatric patients and their families with common well-defined problems. This theory course has a concurrent lab course (PNE 124AL). For successful completion, a grade of at least a "C" must be earned in both this course and its concurrent lab course (lab grade will be same as theory course). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (27-0)

**PNE 124BL Maternal Nursing Care Lab .7 Sem Hr**  
Prerequisite: PNE 122 and PNE 122L with a minimum grade of "C" (2.0). Provides clinical opportunities to apply the roles of Provider of Care and Member within the Discipline of Nursing to the family during child-bearing. Includes observation and selected hands-on experiences in clinical facilities. This lab course has a concurrent theory course (PNE 124B). For successful completion, a grade of at least a "C" must be earned in both this course and its component theory course (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if the lab course is not successfully completed. (31.5)

**PNE 124B Maternal Nursing Care 1.8 Sem Hrs**  
Prerequisite: PNE 122 and PNE 122L with a minimum grade of "C" (2.0). Focuses on basic family centered maternity care, growth and development. This theory course has a concurrent lab course (PNE 124BL). For successful completion a grade of at least a "C" must be earned in both this course and its concurrent lab component (lab grade will be same as theory grade). A final grade of "E" will be assigned in both theory and lab if either course is not successfully completed. (27-0)

**PNE 290-299 Special Projects in Practical Nursing**

## Political Science

**POL 103C American Government 3 Sem Hrs**  
Introduces the development and maintenance of the U.S. system of government. Surveys the nature of American political institutions, behavior, ideas and their structure. Explores core beliefs and their affect on government participation. Explores the role of citizens in a diverse democracy. Intended to be taken only as part of a Learning Community. Credit may be earned any POL 103 course, any POL 104 course, or any POL 111 course but not in both. (This course satisfies the American Government graduation requirement in all curricula.) (45-0)

**POL 103H American Government - Honors 3 Sem Hrs**  
Prerequisite: READING LEVEL 5 or 5B and WRITING LEVEL 4 or 4B and permission of the Honors Office. Introduces the development and maintenance of the U.S. system of government. Surveys the nature of American political institutions, behavior, ideas and their structure. Explores core beliefs and their affect on government participation. Explores the role of citizens in a diverse democracy. Credit may be earned in any POL 103 course, any POL 104 course, or any POL 111 course but not in more than one. (This course satisfies the American Government graduation requirement in all curricula.) (45-0)

**POL 103 American Government 3 Sem Hrs**  
Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Introduces the development and maintenance of the U.S. system of government. Surveys the nature of American political institutions, behavior, ideas and their structure. Explores core beliefs and their affect on government participation. Explores the role of citizens in a diverse democracy. Credit may be earned in any POL 103 course, any POL 104 course, or any POL 111 course but not in more than one. (This course satisfies the American Government graduation requirement in all curricula.) (45-0)

**POL 104C American Government with Project 4 Sem Hrs**  
Introduces the development and maintenance of the U.S. system of government. Surveys the nature of American political institutions, behavior, ideas and their structure. Explores core beliefs and their affect on government participation. Explores the role of citizens in a diverse democracy. Requires participation in a 15 hour service learning project outside the classroom with a community agency or organization. Intended to be taken only as part of a Learning Community. Credit may be earned in any POL 103 course, any POL 104 course, or any POL 111 course but not in more than one. (This course satisfies the American Government graduation requirement in all curricula.) (45-15)

**POL 104H American Government with Project - Honors 4 Sem Hrs**  
Prerequisite: READING LEVEL 5 or 5B and WRITING LEVEL 4 or 4B and permission of the Honors Office. Introduces the development and maintenance of the U.S. system of government. Surveys the nature of American political institutions, behavior, ideas and their structure. Explores core beliefs and their effect on government participation. Explores the role of citizens in a diverse democracy. Requires participation in a 15 hour service learning project outside the classroom with a community agency or organization. Credit may be earned in any POL 103 course, any POL 104 course, or any POL 111 course but not in both. (This course satisfies the American Government graduation requirement in all curricula.) (45-15)

**POL 104 American Government with Project 4 Sem Hrs**  
Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Introduces the development and maintenance of the U.S. system of government. Surveys the nature of American political institutions, behavior, ideas and their structure. Explores core beliefs and their affect on government participation. Explores the role of citizens in a diverse democracy. Requires participation in a 15 hour service learning project outside the classroom with a community agency or organization. Credit may be earned in any POL 103 course, POL 104 course, or POL 111 course, but not in more than one. (This course satisfies the American Government graduation requirement in all curricula.) (45-15)

**POL 212 State and Local Governments 3 Sem Hrs**  
Prerequisite: LEVEL 3 READING or LEVEL 3 WRITING or co-enrollment in ENG 98. Examines the development, structure, organization and problems of the state and local units of government, along with their relation to the federal government. (This course satisfies the American Government graduation requirement in all curricula.) (45-0)

**POL 215 Intro to American Political Thought and Culture 3 Sem Hrs**  
Prerequisite: LEVEL 3 READING or LEVEL 3 WRITING or co-enrollment in ENG 98. Introduces concepts central to American political thought, philosophy, and culture. Explores topics relevant to current political events. (This course satisfies the American Government graduation requirement in all curricula.) (45-0)

**POL 220 Minority Group Politics 3 Sem Hrs**  
Prerequisite: LEVEL 3 READING or LEVEL 3 WRITING or co-enrollment in ENG 098. Examines the dynamics of minority group politics in the American political system. Analyzes the nature, role, techniques, and objectives of ethnic groups in the United States with special emphasis on African-Americans and Hispanics. (This course satisfies the American Government graduation requirement in all curricula.) (45-0)

**POL 221 Comparative Government 3 Sem Hrs**

Prerequisite: LEVEL 3 READING or LEVEL 3 WRITING or co-enrollment in ENG 98. Studies major European and selected non-western political systems. Emphasizes the techniques of comparative analysis and concepts of modernization, political development, and political culture. (This course satisfies the American Government graduation requirement in all curricula.) (45-0)

**POL 222 Politics of the Middle East 3 Sem Hrs**

Examines the internal and external dynamics that shape the politics, economy, and social make-up of Middle Eastern societies. Uses a multidisciplinary approach to explain and evaluate the politics of the region. (45-0)

**POL 223 Judicial Process 3 Sem Hrs**

Prerequisite: LEVEL 3 READING or LEVEL 3 WRITING or co-enrollment in ENG 98. Examines state and federal court systems, including the selection of judges, the roles of primary and secondary appellate courts in civil and criminal cases, lawyers and the organized bar, pressure groups, relations between state and federal courts, as well as the legislative and executive branches, access to courts, and judicial review. Emphasizes judicial policymaking, including constitutional law and civil liberties. (This course satisfies the American government requirement in all curricula.) (45-0)

**POL 225 World Politics 3 Sem Hrs**

Prerequisite: LEVEL 3 READING or LEVEL 3 WRITING or co-enrollment in ENG 98. Examines the nature and structure of world politics. Emphasizes the dynamics of conflict and cooperation, processes of foreign policy decision-making, and analytical approaches used to explain and assess how nations behave. Emphasizes the influence of contemporary issues in world politics on American government and politics. (This course satisfies the American Government graduation requirement in all curricula.) (45-0)

**POL 228 Constitutional Issues 3 Sem Hrs**

Prerequisite: LEVEL 3 READING or LEVEL 3 WRITING or co-enrollment in ENG 98. Examines civil rights/civil liberties based on the Constitution and their interpretation by the U.S. Supreme Court. Assesses controversial issues, including freedom of expression, freedom of religion, abortion, euthanasia, affirmative action, and the rights of persons accused of crime. (This course satisfies the American Government graduation requirement in all curricula.) (45-0)

**POL 229 Political Terrorism 3 Sem Hrs**

Studies state- and non-state sponsored terrorism: definition, origins, purposes, and nature of terrorism; tactics and weapons; objects and audiences; responses of objects and audiences: theory and case studies. (45-0)

**POL 241 Contemporary Feminist Thought 3 Sem Hrs**

Provides a theoretical introduction to feminist thought and relates feminist thought to American political thought and American society. (45-0)

**POL 268 International Studies in Political Science 1-4 Sem Hrs**

The student will elect to do either a survey study of the overall political system of a country other than the United States or an in-depth study of one or more aspects of that political system. Overseas study is an integral part of the course. Expenses for travel and overseas study must be borne by the student. (60-0)

**POL 290-299 Special Projects in Political Science**

## Physical Science

**PSC 101 Physical Science I 4 Sem Hrs**

Physical Science is a general education science lab course in the Physics Discipline. It focuses on some general physics, meteorology, geology, and astronomy concepts. This course is a potpourri of physical science concepts that are taught in a lecture and experimental environment. Recommended for non-science majors, including education majors. (45-30)

**PSC 102 Physical Science II 4 Sem Hrs**

Prerequisite: PSC 101. Investigates fundamental concepts of chemistry and mechanics through a hands-on, applications based approach. Includes such topics as atomic structure, periodic table, bonding, chemical reactions, intermolecular forces, organic chemistry, motion of objects, forces and how they relate to simple machines, mechanical energy, and fluid mechanics. Complements Physical Science I, PSC 101. Recommended for non-science majors, including education majors. (45-30)

**PSC 290-299 Special Projects in Physical Science**

## Psychology

**PSY 101C Applied Psychology 3 Sem Hrs**

Introduces basic principles of human relations that may be used in business and industry. Emphasizes understanding motivation and behavior in practical situations; helps in developing an appreciation of our own behavior so that students may work more successfully with supervisors and with peers. Intended to only be taken in a learning community combination. Credit may be earned in PSY 101 or PSY 101C. (45-0)

**PSY 101 Applied Psychology 3 Sem Hrs**

Prerequisites: LEVEL 3 READING or LEVEL 3 WRITING. Introduces basic principles of human relations that may be used in business and industry. Emphasizes understanding motivation and behavior in practical situations; helps in developing an appreciation of our own behavior so that students may work more successfully with supervisors and with peers. (45-0)

**PSY 211C General Psychology 4 Sem Hrs**

Studies the scientific principles underlying experience and behavior. Examines human behavior in terms of the intrapsychic, behavioral, physiological, and environmental viewpoints. Also examines basic research methods, learning, social factors, developmental changes, physiology, sensation, perception, motivation, intelligence, and personality. Intended to only be taken in a learning community combination. Credit may be earned in only one of PSY 211, PSY 211H, or PSY 211C. (60-0)

**PSY 211H General Psychology - Honors 4 Sem Hrs**

Prerequisites: LEVEL 5 READING and LEVEL 3 WRITING and permission of the Honors Office. Studies the scientific principles underlying experience and behavior. Examines human behavior in terms of the intrapsychic, behavioral, physiological, and environmental viewpoints. Explores basic research methods, learning, social factors, developmental changes, physiology, sensation, perception, motivation, intelligence, and personality. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in PSY 211 or PSY 211H but not both. (60-0)

**PSY 211 General Psychology 4 Sem Hrs**

Prerequisites: LEVEL 3 READING or LEVEL 3 WRITING. Studies the scientific principles underlying experience and behavior. Examines human behavior in terms of the intrapsychic, behavioral, physiological, and environmental viewpoints. Also examines basic research methods, learning, social factors, developmental changes, physiology, sensation, perception, motivation, intelligence, and personality. Credit may be earned in PSY 211 or PSY 211H but not in both. (60-0)

<b>PSY 223</b>	<b>Child Psychology</b>	<b>3 Sem Hrs</b>
Prerequisite: PSY 211 or CD 114 with grade of "C" or better. Provides an in-depth understanding of the emotional, intellectual, social, and physical development in children from conception through adolescence. Considers the effect of heredity, environment, culture, and values on children's behavior, as well as, the effect children have on adults' behavior. (45-0)		
<b>PSY 225</b>	<b>Adolescent Psychology</b>	<b>3 Sem Hrs</b>
Prerequisite: PSY 211. Provides a comprehensive exploration of the dynamic interdependency of physical, social, emotional and cognitive development of adolescents, beginning at the onset of puberty and culminating with a transition into adulthood. Explores the significance of adolescence in the total life span. Examines the influence of family, social, and cultural environments on individual development. Considers the developmental tasks and personal adjustment challenges associated with adolescence. (45-0)		
<b>PSY 230</b>	<b>Psychology of Substance Abuse</b>	<b>3 Sem Hrs</b>
Prerequisite: PSY 211. Studies the predominant theories developed to explain the origins and the prevalence of substance abuse. Examines social deprivation, addictive personality, X-factor, need state, ignorance, peer pressure, personality defects and socialization theories.		
<b>PSY 231</b>	<b>Theories of Personality</b>	<b>3 Sem Hrs</b>
Prerequisite: PSY 211. Examines theories of personality development from a psychodynamic, social learning and humanistic perspective. Critiques Individual theories regarding personality development, abnormality, psychotherapy, research, and the concept of humanity. (45-0)		
<b>PSY 235</b>	<b>Adult Development</b>	<b>3 Sem Hrs</b>
Prerequisites: PSY 211 and PSY 223. Examines human behavior and adaptation in the adult years. Discusses theories of adult development, psychological aspects of normal adulthood, and behavioral disorders due to aging. Emphasizes application of theoretical concepts and research findings. (45-0)		
<b>PSY 241</b>	<b>Abnormal Psychology</b>	<b>3 Sem Hrs</b>
Prerequisite: PSY 211. An examination of symptoms, and treatment of psychological disorders, including the psychodynamic, behavioral, humanistic, and neuroscience views of abnormal behavior. (45-0)		
<b>PSY 290-299</b>	<b>Special Projects in Psychology</b>	
<b>PSY 300</b>	<b>Interviewing, Counseling, and the Helping Relationship</b>	<b>3 Sem Hrs</b>
Prerequisite: ENG 111 or ENG 111A or ENG 111H with a "C" or better. Establishes beginning social work interviewing and relationship skills as well as awareness of the use of self in the helping relationship. Presents specific interviewing strategies for generalist social work practice. Includes student participation in practice sessions using role plays, videotapes and self awareness exercises. Provides opportunities to practice formal and informal writing. Credit may be earned in PSY 300 or SOC 300 but not in both. (45-0)		

## Physical Therapist Assistant

<b>PTA 101</b>	<b>Applied Clinical Anatomy I</b>	<b>2 Sem Hrs</b>
Prerequisite: Admission to the Physical Therapist Assistant Program. Concurrent enrollment in PTA 101LW, PTA 105, PTA 105LW, PTA 110, PTA 110L, ENG 113, and LW 206A. Provides skeletal anatomy concepts necessary to implement procedures utilized in physical therapy practice. Provides the technical and data collection knowledge necessary to assist a physical therapist with goniometry. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (30-0)		
<b>PTA 101L</b>	<b>Applied Clinical Anatomy I Lab</b>	<b>1 Sem Hr</b>
Prerequisite: Admission to the Physical Therapist Assistant Program. Concurrent enrollment in PTA 101, PTA 105, PTA 105LW, PTA 110, PTA 110L, ENG 113, and LW 206A. Provides the skills necessary for palpation of bony landmarks. Prepares the student to perform PROM and goniometric measurements. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (0-30)		
<b>PTA 102</b>	<b>Clinical Neuroanatomy</b>	<b>2 Sem Hrs</b>
Prerequisite: PTA 101, PTA 101LW, PTA 105, PTA 105LW, PTA 110, PTA 110L, ENG 113, and LW 206A, with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 120, PTA 120L, PTA 123W, PTA 123LW, PTA 124, PTA 125, PTA 125LW, and LWA 206B. Provides the neuroanatomy concepts necessary to implement procedures utilized in physical therapy practice. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (30-0)		
<b>PTA 105</b>	<b>Physical Agents I</b>	<b>2 Sem Hrs</b>
Prerequisite: Admission to the Physical Therapist Assistant program. Concurrent enrollment in PTA 101, PTA 101LW, PTA 105LW, PTA 110, PTA 110L, ENG 113, and LW 206A. Provides the theory and principles of modalities including, but not limited to, hydrotherapy, therapeutic massage, thermal agents, ultrasound, traction, intermittent compression, and cryotherapy. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (30-0)		
<b>PTA 105L</b>	<b>Physical Agents I Lab</b>	<b>2 Sem Hrs</b>
Prerequisite: Admission to the Physical Therapist Assistant program. Concurrent enrollment in PTA 101, PTA 101LW, PTA 105, PTA 110, PTA 110L, ENG 113, and LW 206A. Provides the technical skills to perform modalities including, but not limited to, hydrotherapy, therapeutic massage, thermal agents, ultrasound, traction, intermittent compression, and cryotherapy. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (0-75)		
<b>PTA 110</b>	<b>Fundamentals of Patient Mobility</b>	<b>2 Sem Hrs</b>
Prerequisite: Admission to the PTA program. Concurrent enrollment in PTA 101, PTA 101LW, PTA 105, PTA 105LW, PTA 110L, ENG 113, and LW 206A. Introduces basic principles of patient mobility. Focuses on the analysis of gait, gait training, use of assistive devices, patient transfers, postural assessment, balance and flexibility. (30-0)		
<b>PTA 110L</b>	<b>Fundamentals of Patient Mobility Lab</b>	<b>1 Sem Hr</b>
Prerequisite: Admission to the PTA program. Concurrent enrollment in PTA 101, PTA 101LW, PTA 105, PTA 105LW, PTA 110, ENG 113, and LW 206A. Prepares student to perform and instruct basic therapeutic exercise, activities of daily living, kinematic gait analysis, gross postural assessment, transfer techniques, and gait training with assistive devices. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (0-45)		

**PTA 120      Orthopedic Rehabilitation      2 Sem Hrs**  
Prerequisites: PTA 101, PTA 101LW, PTA 105, PTA 105LW, PTA 110, PTA 110L, ENG 113, and LW 206A with a "C" (2.0) minimum grade in each. Concurrent enrollment in PTA 102, PTA 120L, PTA 123W, PTA 123LW, PTA 124, PTA 125, PTA 125LW, and LWA 206B. Introduces common orthopedic injuries and disabilities that affect adults and children. Provides entry-level principles and rationale needed to administer rehabilitation exercise programs for orthopedic conditions. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (30-0)

**PTA 120L      Orthopedic Rehabilitation Lab      1 Sem Hr**  
Prerequisites: PTA 101, PTA 101LW, PTA 105, PTA 105LW, PTA 110, PTA 110L, ENG 113, and LW 206A with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 102, PTA 120, PTA 123W, PTA 123LW, PTA 124, PTA 125, PTA 125LW, and LWA 206B. Provides entry-level technical skills needed to administer rehabilitation exercise programs for orthopedic conditions. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (0-45)

**PTA 121      Human Growth and Development      3 Sem Hrs**  
Prerequisite: PTA 101, PTA 101LW, PTA 105, PTA 105LW, PTA 110, PTA 110L, ENG 113, and LW 206A, with a "C" (2.0) minimum grade. Provides theory in and observation of normal and abnormal physical development from birth through aging. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (45-0)

**PTA 123L      Clinical Medicine Lab      .5 Sem Hr**  
Prerequisites: PTA 101, PTA 101LW, PTA 105, PTA 105LW, PTA 110, PTA 110L, ENG 113, and LW 206A with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 102, PTA 120, PTA 120L, PTA 123W, PTA 124, PTA 125, PTA 125LW, and LWA 206B. Exposes the student to health care practices performed in the acute care environment. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction of the physical therapist. (0-15)

**PTA 123      Clinical Medicine      2.5 Sem Hrs**  
Prerequisite: PTA 101, PTA 101LW, PTA 105, PTA 105LW, PTA 110, PTA 110L, ENG 113, and LW 206A with a "C" (2.0) minimum grade in each. Concurrent enrollment in PTA 102, PTA 120, PTA 120L, PTA 123LW, PTA 124, PTA 125, PTA 125LW, and LWA 206B. Introduces acute and chronic pathological conditions resulting from disease or injury that are commonly treated in physical therapy. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction of the physical therapist. (45-0)

**PTA 124      PTA Clinic I      2 Sem Hrs**  
Prerequisite: PTA 101, PTA 101LW, PTA 105, PTA 105LW, PTA 110, PTA 110L, ENG 113, and LW 206A each with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 102, PTA 120, PTA 120L, PTA 123W, PTA 123LW, PTA 125, PTA 125LW, and LWA 206B. Structures clinical experience to provide the opportunity to observe and assist with physical therapy procedures. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (0-80)

**PTA 125      Applied Clinical Anatomy II      1 Sem Hr**  
Prerequisite: PTA 101, PTA 101LW, PTA 105, PTA 105LW, PTA 110, PTA 110L, ENG 113, and LW 206A with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 102, PTA 120, PTA 120L, PTA 123W, PTA 123LW, PTA 124, PTA 125LW, and LWA 206B. Provides the technical and data collection knowledge necessary to assist a physical therapist with goniometry and muscle testing. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (15-0)

**PTA 125L      Applied Clinical Anatomy II Lab      1 Sem Hr**  
Prerequisite: PTA 101, PTA 101LW, PTA 105, PTA 105LW, PTA 110, PTA 110L, ENG 113, and LW 206A with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 102, PTA 120, PTA 120L, PTA 123W, PTA 123LW, PTA 124, PTA 125, and LWA 206B. Provides the technical and data collection skills necessary to assist a physical therapist with goniometry and muscle testing. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (0-45)

**PTA 205      Physical Agents II      .5 Sem Hr**  
Prerequisites: PTA 102, PTA 120, PTA 120L, PTA 121, PTA 123W, PTA 123LW, PTA 124, PTA 125, PTA 125LW, ENG 113, and LWA 206B, with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 205L PTA 210, PTA 210LW, PTA 213, PTA 213L, PTA 214W, and LWA 206C. Provides the theory and principles necessary to understand electrical stimulation and other advanced modalities. Prepares the student to provide physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (12-0)

**PTA 205L      Physical Agents II Lab      .5 Sem Hr**  
Prerequisite: PTA 102, PTA 120, PTA 120L, PTA 123W, PTA 123LW, PTA 124, PTA 125, PTA 125LW, and LWA 206B, with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 205, PTA 210, PTA 210LW, PTA 213, PTA 213L, PTA 214W, and LWA 206C. Provides the technical skills necessary to perform electrical stimulation and other advanced modalities. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (0-24)

**PTA 209      Fundamentals of Pediatric Rehabilitation      .5 Sem Hr**  
Prerequisites: PTA 102, PTA 120, PTA 120L, PTA 123, PTA 123L, PTA 124, PTA 124, PTA 125, and PTA 125L with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 209L. Introduces students to various aspects of pediatric rehabilitation techniques for orthopedic and neurological disorders. Assesses abnormal behavior and discusses treatment techniques to enhance motor functions. Covers required documentation, legislative issues, and current topics related to providing physical therapy services for children. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (10-0)

**PTA 209L      Fundamentals of Pediatric Rehabilitation Lab      .5 Sem Hr**  
Prerequisite: PTA 102, PTA 120, PTA 120L, PTA 123, PTA 123L, PTA 124, PTA 124, PTA 125, and PTA 125L with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 209. Prepares students to perform pediatric rehabilitation techniques for orthopedic and neurological disorders. Improves independence and function of the child by assessing equipment needs, utilizing adaptive devices, specific positioning techniques, and utilizing treatment techniques to enhance motor functions. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (0-10)

**PTA 210      Neuro-Rehabilitation Techniques      2 Sem Hrs**  
Prerequisites: PTA 102, PTA 120, PTA 120L, PTA 121, PTA 123W, PTA 123LW, PTA 124, PTA 125, PTA 125LW, and LWA 206B, with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 205, PTA 205L, PTA 210LW, PTA 213, PTA 213L, PTA 214W, and LWA 206C. Studies the advanced theory and treatment of patients with diagnosis of stroke, spinal cord injury, traumatic brain injury, as well as the treatments of sensor motor facilitation and inhibition techniques. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (30-0)

**PTA 210L Neuro-Rehabilitation Techniques Lab 1 Sem Hr**  
Prerequisites: PTA 102, PTA 120, PTA 120L, PTA 121, PTA 123W, PTA 123LW, PTA 124, PTA 125, PTA 125LW, and LWA 206B, with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 205, PTA 205L, PTA 210, PTA 213, PTA 213L, PTA 214W, and LWA 206C. Prepares student to utilize and perform treatment techniques for patients diagnosed with stroke, spinal cord injury, and traumatic brain injury. Prepares students to perform sensory motor facilitation and inhibition techniques. (0-60)

**PTA 213 Orthotics and Prosthetics .5 Sem Hr**  
Prerequisites: PTA 102, PTA 120, PTA 120L, PTA 121, PTA 123W, PTA 123LW, PTA 124, PTA 125, PTA 125LW, and LWA 206B, with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 205, PTA 205L, PTA 210, PTA 210LW, PTA 213L, PTA 214W, and LWA 206C. Promotes understanding of orthotic and prosthetic technologies. Studies appropriate use of these technologies. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (12-0)

**PTA 213L Orthotics and Prosthetics Lab .5 Sem Hr**  
Prerequisite: PTA 102, PTA 120, PTA 120L, PTA 121, PTA 123W, PTA 123LW, PTA 124, PTA 125, PTA 125LW, and LWA 206B, with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 205, PTA 205L, PTA 210, PTA 210LW, PTA 213, PTA 214W, and LWA 206C. Prepares student to utilize orthotics and prosthetics, as well as to instruct patients to use this equipment. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (0-15)

**PTA 214 PTA Clinic 2 3 Sem Hrs**  
Prerequisite: PTA 102, PTA 120, PTA 120L, PTA 121, PTA 123W, PTA 123LW, PTA 124, PTA 125, PTA 125LW, and LWA 206B, with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 205, PTA 205L, PTA 210, PTA 210LW, PTA 213, PTA 213L, and LWA 206C. Structures clinical experience to provide the opportunity to observe and assist physical therapy procedures. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (0-160)

**PTA 221 Clinical Seminar 2 Sem Hrs**  
Prerequisite: PTA 205, PTA 205L, PTA 209, PTA 209L, PTA 210, PTA 210LW, PTA 213, PTA 213L, PTA 214W, and LWA 206C with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 224. Studies professional, ethical, legal, and diversity issues related to clinical practice. Analyzes continuity and change in the health care system. Prepares the student to perform physical therapy intervention as part of a physical therapist's plan of care, under the direction and supervision of the physical therapist. (30-0)

**PTA 224 PTA Clinic 3 9 Sem Hrs**  
Prerequisite: PTA 205, PTA 205L, PTA 209, PTA 209L, PTA 210, PTA 210LW, PTA 213, PTA 213L, PTA 214W, and LWA 206C with a "C" (2.0) minimum grade. Concurrent enrollment in PTA 221. Structures clinical experience to provide opportunity for integration and refinement of the knowledge and skills necessary for entry level employment. (0-480)

**PTA 290-299 Special Projects in Physical Therapy Assisting**

## Quality Assurance

**QA 110 Quality Problem Solving Tools 1 Sem Hr**  
Develops basic skills in the use of charts and graphs as tools used in solving problems in a Quality Management organization. Demonstrates twenty-six tools such as Pareto chart, flow charts, cause/effect diagrams, control charts, etc. (15-0)

**QA 120 Quality & Productivity Management 2 Sem Hrs**  
Personnel in management and supervisory positions will demonstrate the skills and insight needed to manage effectively in a quality-conscious work environment. This is done through the study of the philosophies of Deming, Juran, Crosby, Shainin, Taguchi, and with statistical problem solving techniques. (30-0)

**QA 122 ISO 9000/QS 9000 Standards 1 Sem Hr**  
Provides overview of the International Quality System standard, ISO 9000, and the Automotive Quality System Standard based on QS 9000. Covers the history of the standards, their elements and requirements, the levels of documentation needed to prove compliance and steps a company must take to implement standards with the registration process. (15-0)

**QA 124 Quality Systems I 3 Sem Hrs**  
Prerequisite: QA 120 or permission of instructor. Personnel in management and supervisory positions will demonstrate the skills to effectively plan and implement a quality system and show its relationship to other functions in an organization. This is done through the study of the Quality Function and its applications applied to service, business and industry. (45-0)

**QA 125 Quality System Design 3 Sem Hrs**  
Introduces quality assurance methods used by manufacturing and service industries. Examines the concept of a system and identifies techniques used to reduce variation and optimize the system so it produces its intended outcome. Includes quality philosophy, statistical methods for process improvement, variation reduction methods, statistical process control and problem-solving, processes capabilities and data acquisition. (45-0)

**QA 126 Quality Systems II 3 Sem Hrs**  
Prerequisite: QA 120. Demonstrates the skills to interface internal quality systems with external quality systems. Emphasizes applications for service, business and industry. (45-0)

**QA 130 Audit Preparation 1 Sem Hr**  
Prerequisite: QA 120. Explores how to prepare for non-financial audits with managers and supervisors. Focuses on audit function, understanding requirements, and the documentation to meet those requirements. Defines ISO-9000 and other assessment criteria. Explores applications for service, business and industry. (15-0)

**QA 131 Quality Auditing 2 Sem Hrs**  
Explores, with managers and supervisors, the preparation for and performance of non-financial audits. Focuses on selecting audit team, planning, conducting, and summarizing the audit data and issuing a written report on the audit results. Defines auditing functions, both internal and external. Explores applications for service, business and industry. (30-0)

**QA 140 Measurement Systems 3 Sem Hrs**  
Introduces skill development in measurement analysis and measurement systems management. Emphasizes industrial measurement issues involving mechanical gauging and inspection instruments. Determines gauge and dimensional relationships along with describing the various types of industrial gauges and their usage. Explores gauge management issues and ISO 9000 requirements. Credit may be earned in either QA 140 or SKQA 140 but not in both. (45-0)

**QA 191 Quality Teamwork 1 Sem Hr**  
Builds the student's ability to respond to the needs of groups as a team member and a team leader. Studies team structures, roles of team members, and tools used in facilitating teams that contribute to organizational quality. Provides opportunities to model effective team operations. Credit may be earned in only one of the following: QA 191, GB 191, or MGT 191. (15-0)

**QA 244 Statistical Process Control 3 Sem Hrs**  
Prerequisite: MTH 208. Develops skill in the use of control charts to monitor processes. Selects proper control chart, constructs the control chart from process data, and analyzes it for statistical stability. Includes both attribute and variable data control charts to determine process capability. (45-0)

**QA 290-299 Special Projects in Quality Assurance**

## Radiography

- RAD 100 Basic Science of Medical Imaging 2 Sem Hrs**  
Prerequisites: Admission to Radiography program. Concurrent enrollment in RAD 104W, RAD 105, RAD 108, RAD 110, and LW 206A. Presents the basic operations of generating equipment including electrodynamics, electromagnetism, rectification, and circuitry related to the production of x-radiation. Credit may be earned in RAD 232 or RAD 100 but not both. (30-0)
- RAD 104 Introduction to Medical Imaging 2 Sem Hrs**  
Prerequisite: Admission to the Radiography Program. Concurrent enrollment in RAD 100, RAD 105, RAD 108, RAD 110, and LW 206A. Provides an introduction to medical imaging and its role in patient diagnosis and care and basic imaging concepts, systems, and techniques. Includes the structure and operation of health care organizations and health care distribution. Emphasizes professional, legal, and ethical issues related to diagnostic imaging. (30-0)
- RAD 105 Fundamentals of Radiography 3 Sem Hrs**  
Prerequisite: Admission to the Radiography Program. Concurrent enrollment in RAD 100, RAD 104W, RAD 108, RAD 110, and LW 206A. Provides the fundamental theory and skills related to the production of x-radiation. Emphasizes the basic components of radiographic equipment, the characteristics of radiation, and imaging formation. Includes methods of control of radiation and image recording systems. (24-21)
- RAD 108 Patient Care and Management 2 Sem Hrs**  
Prerequisite: Admission to Radiography Program. Concurrent enrollment in RAD 100, RAD 104W, RAD 105, RAD 110, and LW 206A. Develops knowledge and skills in basic concepts of patient care. Includes emergency care procedures, infection control, patient safety and transfers, communication, and patient education. (30-0)
- RAD 110 Principles of Radiographic Exposure 2 Sem Hrs**  
Prerequisite: Admission to Radiography Program. Concurrent enrollment in RAD 100, RAD 104W, RAD 105, RAD 108, and LW 206A. Provides the theory and skills necessary to analyze the diagnostic quality of a radiograph and effectively manipulate exposure variables to produce a diagnostic radiograph. (15-23)
- RAD 120 Principles of Radiation Biology and Protection 2 Sem Hrs**  
Prerequisite: RAD 100, RAD 104, RAD 105, RAD 108, RAD 110, and LW 206A, each with a minimum grade of "C" (2.0). Concurrent enrollment in RAD 130, RAD 135, RAD 140, LWA 206B, and LWA 206C. Examines biological effects of radiation on cells, organs, and systems. Emphasizes methods of practice including radiation exposure standards and radiation monitoring. (30-0)
- RAD 130 Radiographic Procedures 1 2 Sem Hrs**  
Prerequisite: RAD 100, RAD 104, RAD 105, RAD 108, RAD 110, and LW 206A, each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 120, RAD 135, RAD 140, LWA 206B, and LWA 206C. Introduces the basic terminology of radiographic positioning. Provides the knowledge and skill necessary to perform radiographic procedures of the chest, upper and lower limbs. Includes the study of pathology affecting the chest and limbs. (15-23)
- RAD 135 Clinical Education 1 6 Sem Hrs**  
Prerequisites: RAD 100, RAD 104W, RAD 105, RAD 108, RAD 110, and LW 206A, each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 120W, RAD 130, RAD 140W, LWA 206B, and LWA 206C. Provides structured clinical experience necessary to perform radiographic procedures of the chest, and upper and lower limbs. (0-285)

- RAD 140 Clinical Seminar 1 1 Sem Hr**  
Prerequisites: RAD 100, RAD 104W, RAD 105, RAD 108, RAD 110, and LW 206A, each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 120W, RAD 130, RAD 135, LWA 206B, and LWA 206C. Provides a clinical overview of radiographic procedures of the chest and upper and lower limbs. Emphasizes the correlation of all aspects of a radiographic procedure. (15-0)
- RAD 150 Radiographic Procedures 2 2 Sem Hrs**  
Prerequisites: RAD 120W, RAD 130, RAD 135, RAD 140W, LWA 206B, and LWA 206C each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 160 and RAD 165W. Continues radiographic positioning and provides the knowledge and skill necessary to perform radiographic procedures of the abdomen and gastrointestinal, biliary, and urinary systems. Includes image intensification and tomography. (15-23)
- RAD 160 Clinical Education 2 7 Sem Hrs**  
Prerequisite: RAD 120W, RAD 130, RAD 135, RAD 140W, LWA 206B, and LWA 206C each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 150 and RAD 165W. Provides structured clinical experience necessary to perform radiographic procedures of the abdomen and biliary, gastrointestinal, and urinary systems. Requires weekend and evening assignments. (0-395)
- RAD 165 Clinical Seminar 2 1 Sem Hr**  
Prerequisites: RAD 120W, RAD 130, RAD 135, RAD 140W, LWA 206B, and LWA 206C each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 150 and RAD 160. Provides a clinical overview of radiographic procedures of the abdomen and gastrointestinal, biliary, and urinary systems. Emphasizes the correlation of all aspects of a radiographic procedure. (15-0)
- RAD 205 Pharmacology In Imaging 1 Sem Hr**  
Prerequisites: RAD 150, RAD 160, and RAD 165 each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 210, RAD 212, RAD 215, RAD 220, and RAD 225. Presents the basic principles of pharmacology in imaging. Includes the basic techniques of venipuncture and the administration of diagnostic contrast agents and intravenous medications. (15-0)
- RAD 210 Pathology in Radiography 1 Sem Hr**  
Prerequisites: RAD 150, RAD 160, and RAD 165, each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 205, RAD 212, RAD 215, RAD 220, and RAD 225. Provides an overview of the pathological processes that occur as a consequence of aging, disease, heredity, or trauma including signs, symptoms, and clinical manifestations. (15-0)
- RAD 212 Advanced Imaging Equipment 1 Sem Hr**  
Prerequisites: RAD 150, RAD 160, and RAD 165 each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 205, RAD 210, RAD 215, RAD 220, and RAD 225. Presents the basic principles of operation for specialized imaging and recording equipment. Includes special modalities and digital imaging. (15-0)
- RAD 215 Radiographic Procedures 3 2 Sem Hrs**  
Prerequisite: RAD 150, RAD 160, and RAD 165, each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 205, RAD 210, RAD 212, RAD 220, and RAD 225. Continues radiographic positioning. Provides the knowledge and skill necessary to perform radiographic procedures of the shoulder girdle, bony thorax, cervical spine, thoracic spine, lumbar spine, pelvis and hips. Includes pathologic and traumatic conditions affecting the bony thorax, spine, and hips. (15-23)
- RAD 220 Clinical Education 3 7 Sem Hrs**  
Prerequisites: RAD 150, RAD 160 and RAD 165 each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 205, RAD 210, RAD 212, RAD 215, and RAD 225. Provides structured clinical experience necessary to perform radiographic procedures of the shoulder girdle, bony thorax, cervical spine, thoracic spine, lumbar spine, pelvis, and hips. May require weekend and evening assignments. (0-395)

**RAD 225 Clinical Seminar 3 1 Sem Hr**  
Prerequisites: RAD 150, RAD 160, and RAD 165 each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 205, RAD 210, RAD 212, RAD 215, and RAD 220. Provides a clinical overview of radiographic procedures of the shoulder girdle, bony thorax, cervical spine, thoracic spine, lumbar spine, pelvis, and hips. Emphasizes the correlation of all aspects of a radiographic procedure. (15-0)

**RAD 230 Quality Improvement in Imaging 1 Sem Hr**  
Prerequisite: RAD 205, RAD 210, RAD 212, RAD 215, RAD 220, and RAD 225 each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 235, RAD 245 and RAD 258. Introduces the principles of continuous quality improvement in radiology. Includes risk management, problem identification and analysis and quality assurance of the imaging systems (15-0)

**RAD 235 Radiographic Procedures 4 2 Sem Hrs**  
Prerequisite: RAD 205, RAD 210, RAD 212, RAD 215, RAD 220, and RAD 225 each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 230, RAD 245, and RAD 258. Continues radiographic positioning. Provides the knowledge and skill necessary to perform radiographic procedures of the skull and facial cranium. Includes the study of pathology affecting the skull. (15-23)

**RAD 245 Clinical Education 4 7 Sem Hrs**  
Prerequisite: RAD 205, RAD 210, RAD 212, RAD 215, RAD 220, and RAD 225 each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 230, RAD 235, and RAD 258. Provides structured clinical experience necessary to perform radiographic procedures of the skull and facial cranium. Requires weekend and evening assignments. (0-395)

**RAD 258 Radiography Capstone Seminar 2 Sem Hrs**  
Prerequisites: RAD 205, RAD 210, RAD 212, RAD 215, RAD 220, and RAD 225. Concurrent enrollment in RAD 230, RAD 235, and RAD 245. Provides strategies and opportunities to enhance the likelihood of success on the national ARRT registry examination. Credit may be earned in RAD 258 or RAD 250 but not in both. (30-0)

**RAD 260 Clinical Education 5 5 Sem Hrs**  
Prerequisites: RAD 230, RAD 235, RAD 245, and RAD 258 each with a "C" (2.0) minimum grade. Concurrent enrollment in RAD 264. Provides structured clinical experience to perform advanced level radiographic procedures. Includes optional rotations through specialty areas and review for ARRT registry examination. Requires weekend and alternate shift assignments. (0-200)

**RAD 264 Cross Sectional Imaging 1 Sem Hr**  
Prerequisites: RAD 230, RAD 235, RAD 245, and RAD 258 with a minimum "C" (2.0) grade in each. Concurrent enrollment in RAD 260. Introduces sectional anatomy as imaged in modalities such as Computed Tomography, Magnetic Resonance Imaging (MRI), and Positron Emission Tomography (PET). (15-0)

**RAD 290-299 Special Projects in Radiography**

## Residential Construction

**RC 101 Construction Print Interpretation 3 Sem Hrs**  
Instruction in this course includes trade terminology and description of the various views of working drawings, pictorial drawings, and the basic procedures in development of these drawings. Also included is the interpretation of specifications and job information as they pertain to construction and layout. Credit may be earned in either RC 101 or SKCT 111 but not both. (45-0)

**RC 104 Construction Lab 3 Sem Hrs**  
Studies the care and use of woodworking tools. Includes tool terminology, purpose and uses of various tools and the functional principles of woodworking hand tools, including those which are power or pneumatically driven. (15-60)

**RC 106 Concrete and Foundations 3 Sem Hrs**  
Prerequisite: ARC 101. Studies practical methods and procedures of preparing and setting concrete forms for such areas as basement floors, garage floors, driveways, sidewalks, patios, etc. (45-15)

**RC 108 Construction Safety 2 Sem Hrs**  
Studies Occupational Safety and Health Administration (OSHA) safety and health standards required of residential builders. Includes training in first aid and cardio pulmonary resuscitation (CPR) to treat on-the-job injuries. Students will produce a MIOSHA approved safety program. (30-0)

**RC 114 Framing Square 4 Sem Hrs**  
Uses the framing square and speed square in construction. Credit may be earned in either RC 114 or SKCT 114 but not both. (60-0)

**RC 200 Construction Contracting Rules and Regulations 3 Sem Hrs**  
Prerequisite: READING LEVEL 6 and WRITING LEVEL 5. Introduces contracting laws, rules, and regulations as they apply to residential builders. Covers builder's law, builder's license, insurance, deeds and abstracts, loans and land development. (45-0)

**RC 201 Rough and Outside Framing 4 Sem Hrs**  
Prerequisite: RC 104. Provides instruction in the techniques of construction used in all phases of framing and exterior finishing. Credit may be earned in either RC 201 or SKCT 201 but not in both. (30-60)

**RC 203 Residential CAD 3 Sem Hrs**  
Introduces residential design using a 3-D drawing program. Moves from basic plan replication to the designing, drawing, and plotting of a set of construction drawings. (15-60)

**RC 204 Inside Finishing and Hardware 4 Sem Hrs**  
Prerequisites: RC 104, RC 114, and RC 201. Includes principles of interior construction, joinery and installation, and finishing of all types of interior trim. (45-45)

**RC 205 Cabinet Making and Millwork 5 Sem Hrs**  
Prerequisite: RC 104. Studies the construction, placement, and installation procedures of cabinets used in residential buildings. (45-60)

**RC 206 Plumbing, Heating, and Electrical Equipment 3 Sem Hrs**  
Designed to study equipment installation as it pertains to construction and carpentry. Credit may be earned in RC 206 or ARC 111 but not in both. (45-0)

**RC 290-299 Special Projects in Residential Construction**

## Refrigeration, Heating & Air Conditioning

**RHA 121 Fundamentals of Refrigeration & A/C 3 Sem Hrs**  
Examines the physical, gas, and chemical laws of refrigeration. Develops an understanding of the theory of heat, temperatures, pressures of gases and thermodynamics. Analyzes basic refrigeration cycle and components such as vacuum pumps, gauges, and (PT) Pressure Temperature Charts. Develops an understanding of units on safety and EPA Refrigerant Certification. Credit may be earned in RHA 121 or SKPT 121 but not in both. (35-10)

**RHA 122 Refrigeration & A/C Service I 3 Sem Hrs**  
Prerequisites: RHA 121. Focuses on concepts of common types of domestic refrigerators, dehumidifiers, and portable air conditioners. Develops an understanding of special references involving the essentials of construction of complete refrigeration systems. Presents theory and principles underlying repairing refrigeration appliances and practical shop work through classroom demonstrations and lab experiments. Credit may be earned in either RHA 122 or SKPT 122 but not in both. (35-10)

**RHA 123 Commercial Refrigeration Flow Controls I 3 Sem Hrs**

Prerequisite: RHA 122. Develops an understanding of basic skills necessary for servicing of commercial units such as walk-in coolers, reach-ins, display cases, and commercial icemakers. Analyzes refrigeration flow-control components, system components, and piping practices. Credit may be earned in either RHA 123 or SKPT 123 but not in both. (35-10)

**RHA 124 Refrigeration & A/C Service II 3 Sem Hrs**

Prerequisite: RHA 122. Develops an understanding of operational skills in trouble shooting domestic refrigeration and air conditioning systems. Focuses on electrical components and system parts in frost-free, conventional and cyclematic units, and portable air conditioning units. Credit may be earned in either RHA 124 or SKPT 124 but not in both. (35-10)

**RHA 126 Refrigerant Piping & Practices 3 Sem Hrs**

Provides instruction in proper methods of brazing joint design using oxyacetylene torches. Develops skills to correctly size, lay out, and install tubing and piping in refrigeration and heating systems. Covers flow capacities of tubing and piping. Examines techniques to cut pipe threads, use pipe fittings, form swag and flare joints, work with plastic vent pipe and plastic drainpipe, work with high temperature solders and fluxes and learn about fastening devices. (35-10)

**RHA 135 Heating System Fundamentals 3 Sem Hrs**

Focuses on the principles of heating systems, types of fuels, electric heating, venting for combustion furnaces, and the methods of correct duct design through lecture and demonstration. Develops skills and basic knowledge of furnace components, testing, and operations. Reviews indoor air quality enhancements and basic mechanical codes for heating and gas piping installations. Credit may be earned in RHA 135 or SKPT 126 but not in both. (35-10)

**RHA 136 Heating Service Fundamentals 3 Sem Hrs**

Prerequisite: RHA 140 and RHA 135. Examines the electrical schematics on most gas furnace manufacturers' equipment and perform live diagnostics using the multi meters wiring diagrams and shop furnaces. Tests for gas pressures, gas flow rates, and correct air flow measurement. Focuses on diagnostics involving the electrical circuits, airflow rates, gas pressures, gas flow rates and trouble-shooting the furnaces. (35-10)

**RHA 140 Applied Electricity I 3 Sem Hrs**

Prerequisite: MATH LEVEL 4. Covers basic fundamentals of electricity that include introductory schematic symbols and basic electrical circuits, Ohms law, power formulas, series and parallel circuit rules, combination circuits, magnetism, capacitance, inductance and reactance in electrical DC and AC circuits. Applies the above fundamentals to electrical circuits and electrical schematics; calculate voltage, current, resistance and wattage as they apply in an electrical circuit; interpret electrical problems on the refrigeration or heating unit. Uses the multi meter as an Ohmmeter, as a voltmeter, and as an amp meter. Credit may be earned in RHA 140 or SKET 106 but not in both. (45-0)

**RHA 142 Sheetmetal Layout I 3 Sem Hrs**

Analyzes and develops geometrical structures, intersections by radial and triangulation methods of sheet metal layout, the drawing of development layouts, and the forming of actual models with sheet metal. Credit may be earned in RHA 142 or SKMT 171, but not both. (35-10)

**RHA 146 Residential Air Conditioning Systems 3 Sem Hrs**

Prerequisite: RHA 121, RHA 122, and RHA 126. RHA 122 may be taken as a corequisite. Develops skills related to mechanical air conditioning equipment used in comfort cooling and heat pump applications. Examines split and self-contained air conditioning systems. Evaluates and trouble-shoots diagnostics, proper piping, charging methods, and wire diagrams. (35-10)

**RHA 150 Refrigerant Certification 1 Sem Hr**

Focuses on the EPA mandates for refrigerant recovery instruction and testing. Prepares for the EPA Refrigeration Certification test. Covers concepts of information a technician will require to successfully complete the test. You must achieve a score of 80% or higher in 4 test areas to be eligible for certification. Those tests are the Core Area Test, Type I Certification, Type II Certification, and Type III or Universal Certification. To earn an EPA approved Refrigeration Certification License you must pass the Refrigeration Certification test. (15-0)

**RHA 210 Commercial Air Conditioning 3 Sem Hrs**

Prerequisite: MATH LEVEL 4 and RHA 146. Develops an understanding of AC electrical fundamentals concerning the operation, installation, and analysis of HVACR components and control circuits used in commercial air conditioning systems. Examines single- and poly-phase transformers and motors, heating and air conditioning controls, commercial timers, motor starters, contactors, relays, and other control devices. Focuses on rooftop units, split system air-conditioning units, and self-contained air-conditioning units. Includes hands-on training on wiring diagrams, wiring projects, and sealed systems. (35-10)

**RHA 225 Commercial Refrigeration II 3 Sem Hrs**

Prerequisite: RHA 123. Develops additional skills and understanding in the servicing of commercial units such as walk-in coolers, reach-ins, display cases, and commercial icemakers. Focuses on electrical systems and diagrams. Analyzes single-phase systems and three-phase systems. Credit may be earned in either RHA 225 or SKPT 225, but not in both. (35-10)

**RHA 230 Design of HVAC Systems 5 Sem Hrs**

Prerequisite: RHA 135. Focuses on heat gain and loss in residential and commercial structures with both forced air and hydronics representation. Explores computerized and manual load calculations and air system instrumentation in the lab sessions. Develops skills in use of Manual J and Manual D computer editions for heat load and duct sizing. (45-30)

**RHA 233 Commercial Refrigeration III 5 Sem Hrs**

Prerequisite: RHA 122 and RHA 225. Examines and identify refrigeration units associated with supermarket applications and the food industry. Diagnoses multiplex systems and self-contained equipment for medium/low temperature applications such as piping and trouble shooting mechanical and electrical components. (45-30)

**RHA 235 Hydronic and Oil Heating Fundamentals 3 Sem Hrs**

Prerequisite: RHA 135. Explains parts of the hydronic systems and oil furnaces that include the operating sequences for safe, efficient combustion and flame safety. Trouble-shoots electrical and electronic control systems, flame safety, and mechanical problems on oil fired furnaces, boilers, hydronic systems, and wire diagrams. (35-10)

**RHA 290-299 Special Projects in Refrigeration/Heating & Air Conditioning**

## Respiratory Care

**RT 100 Basic Sciences for Respiratory Care 2 Sem Hrs**

Prerequisite: MATH LEVEL 4 or MTH 097 with "C" (2.0) minimum grade within the past five years. Introduces the basic principles of math, chemistry, and physics utilized in the field of respiratory care. Emphasis is placed on the physical and chemical principles relating to liquids and gases as they provide a foundation for the study of respiratory care. (30-0)

**RT 117 Basic Respiratory Care I 3 Sem Hrs**

Prerequisite: Admission to the Respiratory Care Program. RT 118, RT 121, RT 126, and RT 131 must be taken concurrently. Presents the theory and application of skills required for the delivery of the basic respiratory care modalities of medical gases, humidity, and aerosol therapy. Emphasizes treatment of adult and pediatric patients with application to specific disease states. (39-12)

**RT 118 Basic Respiratory Care II 3 Sem Hrs**  
Prerequisite: Admission to the Respiratory Care Program. RT 117, RT 121, RT 126, and RT 131 must be taken concurrently. Presents the theory and application of skills required to control transmissible diseases, to perform an appropriate physical assessment of the respiratory care patient, and for the delivery of the basic respiratory care modalities of pharmacology, incentive spirometry, and chest physical therapy. Emphasizes treatment related to adult and pediatric patients with application to the specific disease states. (38-14)

**RT 121 Orientation to RC 2 Sem Hrs**  
Prerequisite: Admission to the Respiratory Care Program. RT 117, RT 118, RT 126, and RT 131 must be taken concurrently. Introduces the role of a professional respiratory therapist from an historical, professional, and management perspective as well as the clinical setting. Includes CPR for the Professional Rescuer. (15-30)

**RT 126 Clinical Education I 3 Sem Hrs**  
Prerequisite: Admission to the Respiratory Care program. RT 117, RT 118, RT 121, and RT 131 must be taken concurrently. Provides the opportunity in the clinical setting to apply and practice skills learned. (0-120)

**RT 131 Artificial Airway Care and Manual Ventilation 2 Sem Hrs**  
Prerequisite: Admission to the Respiratory Care Program. RT 117, RT 118, RT 121, & RT 126 must be taken concurrently. Presents the theory and application of skills required to provide care of the patient with an artificial airway and manual ventilation. (26-8)

**RT 132 Adult Ventilatory Care 3 Sem Hrs**  
Prerequisites: RT 117, RT 118, RT 121, RT 126, and RT 131. RT 135, RT 146, and RT 149 must be taken concurrently. Presents the theory and application of skills required to provide adult mechanical ventilatory care. (39-12)

**RT 135 Diagnostics and Special Procedures 4 Sem Hrs**  
Prerequisites: RT 117, RT 118, RT 121, RT 126, & RT 131. RT 132, RT 146, and RT 149 must be taken concurrently. Presents the theory and application of skills required to perform arterial and mixed venous blood sampling and analysis, basic pulmonary function testing, and to interpret the results of and make recommendations for care based on these diagnostic procedures. Emphasizes the respiratory therapist's role in chest and lateral neck x-ray evaluation, bronchoscopy, and chest tube drainage. (54-12)

**RT 146 Clinical Education II 6 Sem Hrs**  
Prerequisites: RT 117, RT 118, RT 121, RT 126 and RT 131. RT 132, RT 135, and RT 149 must be taken concurrently. Provides the opportunity to apply clinical skills with emphasis on the critically ill patient. (0-240)

**RT 149 Clinical Ed 2 Seminar 1 Sem Hr**  
Prerequisites: RT 117, RT 118, RT 121, RT 126, and RT 131. RT 132, RT 135, and RT 146 must be taken concurrently. Provides the opportunity to integrate the classroom and clinical activities of the concurrent courses in a seminar format. (15-0)

**RT 150 Cardiovascular Evaluation and Monitoring 3 Sem Hrs**  
Prerequisites: RT 132, RT 135, RT 146, & RT 149. Presents the theory and application of skills required to provide adult hemodynamic and ECG monitoring and interpretation. (41-8)

**RT 160 Transition-Technician to Therapist 2 Sem Hrs**  
Completion of an AMA-approved Respiratory Therapy Technician Program within the last 2 years or completion of a Technician program with at least one year of work experience in the last 2 years; or certification (CRTT) by the National Board of Respiratory Care with at least 3 years of work experience in the last 5 years. Must be taken concurrently with RT 235. Emphasis will be upon material in RT 116, 133, and 134. Successful completion of this course and RT 235 will enable technicians to enter the second year of the therapist program. Will only be offered if space in the program permits. (30-0)

**RT 207 Cardiopulmonary Pathophysiology 3 Sem Hrs**  
Prerequisites: RT 150 or RT 105 and RT 160 for the transition student. RT 211, RT 212, RT 214, RT 216, RT 229, RT 226 must be taken concurrently. Presents the cause, clinical presentation, and treatment of common cardiopulmonary diseases. (45-0)

**RT 211 Advanced Cardiopulmonary Physiology 3 Sem Hrs**  
Prerequisites: RT 150 or RT 150 and RT 160 for the transition student. RT 207, RT 212, RT 214, RT 216, RT 229, & RT 226 must be taken concurrently. Presents the study of advanced cardiopulmonary physiology as the basis for evaluation and treatment of cardiopulmonary pathophysiology. (45-0)

**RT 212 Advanced Ventilator Management 2 Sem Hrs**  
Prerequisites: RT 150 or RT 150 and RT 160 for the transition student. RT 207, RT 211, RT 214, RT 216, RT 229, & RT 226 must be taken concurrently. Presents the advanced theory and application of skills required to monitor, manage, and wean patients on mechanical ventilation. (26-8)

**RT 214 Seminar I 1 Sem Hr**  
Prerequisites: RT 150 or RT 150 and RT 160 for the transition student. RT 207, RT 211, RT 212, RT 216, RT 226, & RT 229 must be taken concurrently. Provides an opportunity to research, write a report, and make an oral presentation on an area of interest in the field of respiratory care. (15-0)

**RT 216 Rehabilitation and Home Care 1 Sem Hr**  
Prerequisites: RT 150 or RT 150 and RT 160 for the transition student. RT 207, RT 211, RT 212, RT 214, RT 229 and RT 226 must be taken concurrently. Presents the theory and application of skills required to provide pulmonary rehabilitation and home care. (13-4)

**RT 226 Clinical Education III 6 Sem Hrs**  
Prerequisites: RT 150 or RT 150 and RT 160 for the transition student. RT 207, RT 211, RT 212, RT 214, RT 216, and RT 229 must be taken concurrently. Provides the opportunity to review the theory and practice clinical skills. (0-240)

**RT 229 Clinical Ed 3 Seminar 1 Sem Hr**  
Prerequisites: RT 150 or RT 150 and RT 160 for the transition student. RT 207, RT 211, RT 212, RT 214, RT 216, and RT 226 must be taken concurrently. Provides the opportunity to integrate the classroom and clinical activities of the concurrent courses in a seminar format. (15-0)

**RT 231 Maternal and Neonatal Respiratory Care 2 Sem Hrs**  
Prerequisite: RT 207, 211, 212, 214, 216, 226 and 229. RT 234, RT 240, RT 244, RT 246 must be taken concurrently. Presents the theory and application of maternal and neonatal respiratory care. Emphasizes fetal development, the birth process, cardiopulmonary changes following birth, and neonatal cardiopulmonary pathophysiology. (27-6)

**RT 234 Seminar II 1 Sem Hr**  
Prerequisites: RT 207, RT 211, RT 212, RT 214, RT 216, RT 226 and RT 229. RT 231, RT 240, RT 244 and RT 246 must be taken concurrently. Provides an opportunity to research, write a report, and make an oral presentation on any area of interest in the field of respiratory care. (15-0)

**RT 240 Advanced Respiratory Care Pharmacology 3 Sem Hrs**  
Prerequisite: RT 207, RT 211, RT 212, RT 214, RT 216, RT 226 and RT 229. RT 231, RT 234, RT 244 and RT 246 must be taken concurrently. Presents the theory and application of advanced respiratory care pharmacology as it relates to cardiopulmonary pathophysiology. (45-0)

**RT 244 Optional Rotation/Special Project 1 Sem Hr**  
Prerequisites: RT 207, RT 211, RT 212, RT 214, RT 216, RT 226 and RT 229. RT 231, RT 240, RT 234, and RT 246 must be taken concurrently. Provides an opportunity to choose a rotation or special project to meet their personal goals in the field of respiratory care. Emphasizes the design, completion, and summarization of the project. (15-0)

**RT 246 Comprehensive Clinical Education 8 Sem Hrs**  
Prerequisites: RT 207, RT 211, RT 212, RT 214, RT 216, RT 226, and RT 229. RT 231, RT 234, RT 240, and RT 244 must be taken concurrently. Provides the opportunity to apply all of the knowledge and skills presented in the program. Emphasizes the integration of all levels of knowledge and skills as a prelude to functioning as a graduate respiratory therapist. (0-320)

**RT 290-299 Special Projects in Respiratory Care**

## Interdisciplinary Science

**SCI 099 Foundation For Science 4 Sem Hrs**  
Develops competency in content and skills in college science classes and intended for students unsure of adequacy of preparation for college science. Includes use of scientific method, measurement practices in metrics, communicating and presenting scientific data, classification techniques, spatial relationships, and maps. Presents methods for improving science study skills, note taking, data recording and analysis. (Cannot be counted toward Natural Science or lab credit.) Does not earn credit toward graduation. Credit may be earned in SCI 099 or in SCI 100 but not both. (75-15)

**SCI 250 Research Project In Science 2-6 Sem Hrs**  
Prerequisites: CHM 112 or CHM 230. Designed to provide science student with opportunity to design, carry out a science research project under the supervision of a faculty advisor. A research report will be prepared that includes a library search, problem identification, procedure documentation, data, data analysis, and conclusion. Evaluation will be handled by a team of faculty and/or experts. Credits awarded will be based on the nature of the project and its evaluation. Two credits are minimum requirement. Beneficial to all science majors in Biology, Chemistry, and Engineering. (0-30)

**SCI 290-299 Special Projects in Interdisciplinary Science** )

## Skilled Trades

**SKCA 114 Introduction to CAD 2 Sem Hrs**  
Prerequisites: Either SKDR 101, DRF 104, 105, 121, or ARC 105. CST 103 suggested or basic knowledge of the Windows Operating System. Introduces 2D CAD drawing, including basic drawing and editing commands as related to architectural, mechanical and civil applications. Studies CAD system interface, hardware, a current operating system, file management techniques, creating templates, creating and modifying geometry, dimension and text styles, block and external reference insertion, model space/paper space layouts, and plotting techniques. Credit may be earned in CAD 114 or SKCA 114 but not in both. (30-15)

**SKCA 120 Introduction to CAM 3 Sem Hrs**  
Prerequisites: DRF 104 or DRF 105 or SKDR 101; and CST 103 or CAD 114; or permission of instructor. Introduces the basics in computer geometry creation including line, arc, curve creation and manipulation. Gives a foundation to build on advanced CAD/CAM techniques. Instructs students on file transfer systems from CAD to CAM with emphasis on proper drawing techniques, including file type-save-transfer. Projects will be drawn, checked and created on appropriate equipment. Shows links between CNC machines on the shop floor and their relationship with the design process. Generates code from created drawings to be run on Computer Numerical Controlled equipment. Credit may be earned in CAD 120 or SKCA 120 but not in both. (30-30)

**SKCN 162 Computer Numerical Control Theory 4 Sem Hrs**  
Prerequisites: MS 113 or MS 114 or SKTR 181 and SKMA 103 or MTH 103 or MT 110 or basic knowledge of machining processes and trigonometry. Uses various methods, such as a text editor, machine control unit, and CAD/CAM (MasterCam) to produce alpha-numeric code (G-Code) which will run CNC machinery. Uses blueprints to problem solve and program both point-to-point and complex contours on machining centers and turning centers. Discusses machines with 2, 3, 4, and 5 axis controls. Emphasizes common formats of programming. Discusses machine tool controllers including HAAS, Funac, OKK, Fadal and Okuma. Includes hands-on activities. Credit may be earned in either CNC 162 or SKCN 162 but not in both. (40-20)

**SKCN 216 CNC with Machining Applications 4 Sem Hrs**  
Prerequisites: CAD 120 or SKCA 120, MS 114 or SKTR 182, CNC 162 or SKCN 162, MS 130 or concurrent enrollment in MS130, or prior experience in CAD, machine tools, CNC programming, and personal computers. Emphasizes the programming methodology for producing quality parts using the CNC machines. Discusses conversational programming language with secondary emphasis on tooling setups, part setups, and machining. Utilizes horizontal and vertical machining center for program testing. Credit may be earned in SKCN 216 or CNC 216 but not both. (0-100)

**SKCN 225 Mastercam 4 Sem Hrs**  
Prerequisites: CAD 120 or SKCA 120, and CNC 162 or SKCN 162 or instructor permission. Teaches the advanced concepts of CNC programming for lathe work, mill 3 and 4 axis work, and/or other machinery, shop floor programming, and the principles of CNC operations. Emphasizes various machining operations, accompanied by demonstrations, student programming, and hands-on setup and machine operation. Emphasizes the creation of error free part programs using the MASTERCAM programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system, or wire EDM. Credit may be earned in either SKCN 225 or CNC 225 but not in both. (0-100)

**SKCN 285 Computer Numerical Control Capstone 4 Sem Hrs**  
Prerequisites: Permission of instructor. Demonstrates application-based activities that tie a majority of your previous manufacturing learning together. Incorporates skills learned in drafting, CAD, manual and CNC machine tools, and CAM to complete the capstone project. Applies critical thinking and spatial analysis abilities in the processing of this project. Applies the fundamentals of ID tool design and tool making, fixture building, and geometric dimensioning and tolerancing (GD&T). Credit may be earned in CNC 285 or SKCN 285 but not in both. (30-60)

**SKCT 101 Industrial Millwright Procedures 3 Sem Hrs**  
Prerequisite: SKDR 101. A course for millwrights emphasizing blueprint reading, layout of typical industrial construction, equipment, and safety and guarding. Topics covered include plan and elevation prints of building footings and foundation, mechanical services, equipment and machinery foundations, ventilation systems, catwalks, decking, platforms, and various conveying systems. (45-0)

**SKCT 102 Building Materials 3 Sem Hrs**  
To learn development, properties, and composition of various building materials. To develop perception for economical and appropriate application of building materials. To learn various sources of technical data about residential and industrial building materials. To develop skills of building material application. (45)

**SKCT 105 Building Site Surveying 3 Sem Hrs**  
Prerequisite: MATH LEVEL 4. Studies fundamentals of site analysis, including utility services, metes and bounds, solar access and restrictions. Teaches elements of surveying including use of instruments, leveling, measurement of angles and distances, contours, location of site elements and development of a site plan from field data. Interprets engineering surveys, introduces landscape design, and studies computer aided design examples. Credit may be earned in ARC 221 or SKCT 105, but not in both. (45-0)

**SKCT 106 Concrete and Foundations 3 Sem Hrs**  
Prerequisite: SKCT 102. Studies practical methods and procedures of preparing and setting concrete forms for such areas as basement floors, garage floors, driveways, sidewalks, patios, etc. (45-15)

**SKCT 111 Construction Print Interpretation 3 Sem Hrs**  
Instruction in this course includes trade terminology and description of the various views of working drawings, pictorial drawings, and the basic procedures in development of these drawings. Also included is the interpretation of specifications and job information as they pertain to construction and layout. Credit may be earned in either SKCT 111 or RC 101 but not both. (45)

**SKCT 114 Framing Square 4 Sem Hrs**  
Uses the framing square and speed square in construction. Credit may be earned in either SKCT 114 or RC 114 but not in both. (60-0)

**SKCT 201 Rough and Outside Framing 4 Sem Hrs**  
Prerequisite: SKCT 114 and RC 104. Provides instruction in the techniques of construction used in all phases of framing and exterior finishing. Credit may be earned in either SKCT 201 or RC 201 but not in both. (30-60)

**SKCT 204 Inside Finishing and Hardware 4 Sem Hrs**  
Prerequisite: SKCT 114. Includes principles of interior construction, joinery and installation, and finishing of all types of interior trim. Credit may be earned in either SKCT 204 or RC 204 but not in both. (45-45)

**SKCT 205 Cabinet Making and Millwork 5 Sem Hrs**  
Prerequisite: SKCT 204. A study is made of the construction of, the placement of, and installation procedures of cabinets used in residential and commercial building. (45-60)

**SKDR 101 Sketching and Blueprint Reading 4 Sem Hrs**  
Topics include: The graphic language and design, lettering, sketching, and shape descriptions, multiview projections, sectional views, auxiliary views, shop processes, thread fasteners and springs, and print reading of typical shop blueprints. (60)

**SKDR 111 Drawing II 3 Sem Hrs**  
Prerequisite: SKDR 101. A continuation of SKDR 101. Topics include multiview and pictorial sketching and drawing, sections drawing, dimensioning and tolerancing. (45)

**SKDR 121 Descriptive Geometry 3 Sem Hrs**  
Prerequisite: SKDR 111. Topics include orthographic projections, primary auxiliary views and lines, planes, successive auxiliary views, piercing points, intersection of planes, and angle between planes. (45)

**SKDR 128 Geometric Tolerancing 2 Sem Hrs**  
Prerequisite: SKDR 111. Primary emphasis is on geometric symbols used in place of written notes on industrial drawings including datums, symbols, and other items tolerancing to the geometry of the part. Credit may be earned in either SKDR 128 or DRF 128 but not both. (30)

**SKDR 130 Tool and Die Design 4 Sem Hrs**  
Prerequisite: SKDR 111. Topics include: design of jigs and fixtures, design of gaging mechanisms, design of automatic tooling, machining cost calculations. The student will use this data to make class presentations with questions and answer sessions. (60)

**SKDR 131 Pattern Design I 3 Sem Hrs**  
Prerequisite: SKDR 111. Course covers terms and definitions of pattern design. Students will learn how to make calculations from tables and drawing, estimate weights from pattern charts and materials codes, and sketch and detail typical pattern designs. (45-0)

**SKDR 141 Pipe and Tube Isometrics 3 Sem Hrs**  
Sketching course for industrial pipefitters includes all mensurations for layout and construction. (45)

**SKEL 101 Basic Electronics 6 Sem Hrs**  
Prerequisite: SKMA 113. The first course in a series to train electrician apprentices in the theory and application of electronics to industrial control systems. Basic electronic devices will be discussed, along with how they work and their electrical characteristics. Simple electronic circuits will be set up on trainers to illustrate the application of the devices. Troubleshooting techniques and basic test instruments will be discussed and used. (90)

**SKEL 102 Industrial Electronics 4 Sem Hrs**  
Prerequisite: SKEL 101. The second course in a series to train electrician apprentices in the theory and application of electronics to industrial control systems. Application of basic electronic devices to industrial control systems will be discussed. Major topics will be digital solid state logic and power control using SCR's and TRIAC's. Troubleshooting techniques and basic test instruments will be discussed and used. (60-0)

**SKEL 105 Electrical Utility/Lineworker Orientation 2 Sem Hrs**  
Orients student to basic requirements of electrical utility/lineworker career. Requires application of safety protocol. Includes mandatory classroom and outside activities. Requires use of safety equipment and practice of all activities. (15-15)

**SKEL 111 Conventional Controls 3 Sem Hrs**  
Prerequisite: SKMA 111. Develops competencies in reading basic electrical blueprints and troubleshooting through familiarization of basic control devices. Develops visual and analytical relationships between the device and the corresponding blueprint configurations and symbols. Discusses and applies basic troubleshooting skills using the electro-pneumatic laboratory simulation training board. (45-0)

**SKEL 121 Advanced Controls I 5 Sem Hrs**  
Prerequisite: SKEL 102. Topics include: vacuum and vapor tubes, resistance welding controls, induction heating, motors, inverters, polyphase rectifiers, op-amps transducers, instrumentation, closed loop controls, servo systems, temperature controls, troubleshooting. (75)

**SKEL 122 Advanced Controls II 4 Sem Hrs**  
Prerequisite: SKEL 121. Present students with basic concepts and hands-on experience with programmable digital control systems. Emphasis placed on hardware, program (software) entry, R-T-C math, documentation, trouble-shooting, communication links (generic) and peripheral equipment. (60-0)

**SKEL 131 AC/DC Machinery 3 Sem Hrs**  
Prerequisite: SKMA 113. This course is one in a series of courses on conventional industrial controls. Topics include physics of electromotive forces, armature reaction, induction, DC generator types, AC generators, DC motors, DC motor starters, transformers, AC motors and variable speed drive systems. (45-0)

**SKEL 134 Lineworker Climbing Techniques 5 Sem Hrs**  
Prerequisite: Current validation for Lineworker Level I program. Corequisites: SKEL 136 and SKEL 138. Provides participants with the basic knowledge and pole climbing skills necessary to progress through the Lineworker/Electrical Utility Program. Student is responsible for climbing equipment, tools, and foul weather gear as required. Cost may exceed \$200. (15-63)

**SKEL 136 Utility Worker Training 5 Sem Hrs**  
Prerequisites: Current validation for Lineworker Level I program. Corequisites: SKEL 134 and SKEL 138. Provides participants with the basic Ground Worker/Utility Worker knowledge and skills necessary to progress through the Lineworker/Electrical Utility Program. (15-63)

**SKEL 138 Lineworker Level I 6 Sem Hrs**  
Prerequisites: Current validation for Lineworker Level I program. Corequisites: SKEL 134 and SKEL 136. Provides hands-on experience with energized equipment with voltages up to 240V. (30-74)

**SKEL 141 Industrial Electrical Codes & Standards 3 Sem Hrs**

Prerequisite: SKEL111 AND SKEL131. Develops competency in the application of the National Electrical Code (NEC) and its relationship to industry and some residential wiring as written by the National Fire Protection Association (NFPA). Includes the Joint Industrial Council (JIC) standards for industrial electrical mass production operations and equipment. Emphasizes safety regarding hazardous locations, electrical grounding, ground faults, fusing, motor circuit protection and controls as well as electro-mechanical and hydraulic devices. (45-0)

**SKET 106 Applied Electricity I 3 Sem Hrs**

Prerequisite: MATH LEVEL 4. Covers basic fundamentals of electricity that include introductory schematic symbols and basic electrical circuits, Ohms law, power formulas, series and parallel circuit rules, combination circuits, magnetism, capacitance, inductance and reactance in electrical DC and AC circuits. Applies the above fundamentals to electrical circuits and electrical schematics; calculate voltage, current, resistance and wattage as they apply in an electrical circuit; interpret electrical problems on the refrigeration or heating unit. Uses the multi meter as an Ohmmeter, as a voltmeter, and as an amp meter. Credit may be earned in SKET 106 or RHA 140 but not in both. (45-0)

**SKET 107 Applied Electricity II 2 Sem Hrs**

Prerequisite: SKET 106 or permission of Technical, Trades, and Manufacturing Division Office. Furthers the study of electrical applications. Provides an in-depth study of frequency, peak-effective-average voltage, inductance, capacitance, three phase power, resistive circuits, coils, capacitors, lost power, and power factor correction. (30-0)

**SKET 162 Industrial Robotics I 3 Sem Hrs**

Prerequisites: SKET 107 and SKMT 101. Studies modern industrial robotic systems. Introduces the operation, use and safety of industrial robots. Discusses feedback mechanisms, actuators, sensors, power supplies, micro-controllers, P.C. computer control and programming. Emphasizes a hands-on approach to system analysis, critical thinking, solution to open-ended problems, computer usage, and teamwork. Credit may be earned in SKET 162 or ET 162 but not both. (15-30)

**SKET 164 Robotics Electrical Service & Troubleshooting 3 Sem Hrs**

Perequisites: SKET 107 and SKMT 101. Identifies the electrical component of robots, theory of operation. Introduces proper troubleshooting procedures for the robot controller and manipulator. Approximately 50 percent of the course will be hands-on troubleshooting of actual robot system and controller. Credit may be earned in SKET 164 or ET 164 but not both. (15-30)

**SKET 262 Industrial Robotics II 3 Sem Hrs**

Prerequisite: SKET 162. Emphasizes programming, advanced manipulation, grip load instructions, velocity, and acceleration instruction, offline editing, handling errors, and robot configuration. Discusses programming concepts and structures in the C++ programming language, industry-like applications and system integration projects. Emphasizes a hands-on approach to system analysis, critical thinking, solutions to open-ended problems, computer usage, and teamwork. Credit may be earned in SKET 262 or ET 262 but not both. (15-30)

**SKGM 110 Automotive Electronics Service 4 Sem Hrs**

Introduces the operation, maintenance, and service of battery, charging, starting systems and GM electrical and electronic systems. Credit may be earned in AGM 110 or ACD 110 or SKGM 110 or AGM 131 but not in more than one. (40-40)

**SKGM 112 Engine Service 6 Sem Hrs**

Introduces the operation, maintenance, and service of GM engines for mechanical performance. Stresses proper repair techniques and diagnosis of engine noises. Credit may be earned in AGM 112 or ACD 112 or SKGM 112 or AGM 141 but not in more than one. (45-75)

**SKGM 114 Brakes, ABS, TCS Service 5 Sem Hrs**

Introduces the operation, maintenance, and service of GM base brakes, anti-lock and traction control. Presents general auto lab equipment operation and stresses safety. Credit may be earned in AGM 114 or ACD 114 or SKGM 114 or AGM 132 but not in more than one. (40-60)

**SKGM 142 Electronic Engine and Emission Controls Service 9 Sem Hrs**

Prerequisite: SKGM 112. Introduces the operation, maintenance, and service of GM engines for drivability performance. Stresses proper repair techniques and diagnosis of engine drivability problems. Credit may be earned in SKGM 142 or AGM 142 or ACD 142 but not in more than one. (81-144)

**SKGM 210 Body Electronics Service 3 Sem Hrs**

Prerequisite: SKGM 110. Stresses the operation, diagnosis, and service of GM body electrical and electronics systems. Credit may be earned in AGM 210 or SKGM 210 or ACD 210 or AGM 241, but not in more than one. (30-30)

**SKGM 212 Suspension System Service 7 Sem Hrs**

Introduces the operation, maintenance, and service of GM steering and suspension systems. Credit may be earned in AGM 212 or SKGM 212 or ACD 212 or AGM 133 but not in more than one. (56-84)

**SKGM 214 Heating/Air Conditioning 5 Sem Hrs**

Introduces the operation, maintenance, and service of GM Heating, Ventilation, and Air Conditioning systems and their controls. Credit may be earned in AGM 214 or SKGM 214 or ACD 214 or AGM 233, but not in more than one. (50-50)

**SKGM 216 Driveline Service 6 Sem Hrs**

Prerequisite: SKGM 143. Studies GM passenger car and light truck clutch, manual transmission, driveshaft, differential, transaxle, front driving axle, and transfer case terminology, operation, and diagnosis. Develops skills in diagnosis, adjustment, and repair of clutches, manual transmissions, driveshafts, differentials, transaxles, front driving axles, and transfer cases. Credit may be earned in AGM 216 or SKGM 216 or ACD 216 or AGM 231 but not in more than one. (60-60)

**SKGM 218 Automatic Electronic Transmission Service 8 Sem Hrs**

Introduces the operation, maintenance, and service of GM electronically controlled transmissions. Credit may be earned in AGM 218W or SKGM 218W or ACD 218W or AGM 232, but not in more than one. (80-100)

**SKMA 096 Pre-Algebra 2 Sem Hrs**

Prerequisite: MATH LEVEL 2. Provides preparation for algebra. Includes fractions, decimals, integers, ratios, and percentages with an introduction to equations, graphs, and functions. May receive credit in only one of the following: MTH 096 or SKMA 096 or SKMA 101 or MTH 106. Does not earn credit toward graduation. (30-0)

**SKMA 097 Algebra I 3 Sem Hrs**

Prerequisite: MATH LEVEL 3. Includes natural number, integers, first-degree equations and inequalities, special products, factoring, rational expressions and equations, graphs, and linear systems, exponents, and quadratic equations. May receive credit in only one of the following: MTH 107 or MTH 097 or SKMA 097 or SKMA 102. Does not earn credit toward graduation. (45-0)

**SKMA 099 Pre-Apprenticeship Basic Skills 2 Sem Hrs**

Explores basic mathematics principles. Discusses whole numbers, fractions, decimals, percentages, metric system, rational numbers, polynomials, equations, exponents, and radicals. Reviews algebra, geometry and graphical math. Introduces spatial skills and blue print reading. Examines orthographic projections, three view drawings, missing line(s), point and surface identification, fitting pieces together, rotated/flipped and cube unfolding and folding. Includes mechanical comprehension. Analyze physical principles, simple machines, vectors, hydraulics, liquids, density and circular motion. Completion of this course does not guarantee an apprenticeship. Does not earn credit toward graduation. (30)

**SKMA 103 Applied Geometry and Trigonometry 4 Sem Hrs**  
Prerequisite: Math Level 4. Includes the following geometry topics: angles, triangles, polygons, circles, prisms, cylinders, and cones. Includes right-triangle trigonometry, radian measure, oblique-triangle trigonometry, and graphs of trigonometric functions. May receive credit in only one of the following: SKMA 103, MTH 103, or MT 110. (60-0)

**SKMA 111 Applied Integrated Electrical Math I 6 Sem Hrs**  
Prerequisite: MATH LEVEL 3. Develops competency in the application of mathematics principles to electrical circuit configurations. Includes mathematical equations and formulas necessary to solve D.C. circuit applications applied to electrical, mechanical and process industrial control equipment. Covers non-mathematical theory related to electricity and electronics. (90-0)

**SKMA 112 Applied Integrated Electrical Mathematics II 3 Sem Hrs**  
Prerequisite: SKMA 111. Develops further competency in the application of mathematics principles to electrical circuit configurations including DC and AC circuit applications. Includes trigonometry as applied to electrical-circuit theory and non-mathematical theory related to electricity and electronics. (45-0)

**SKMA 113 Applied Integrated Electrical Math III 3 Sem Hrs**  
Prerequisite: SKMA 112. This course is the third in a series of electrical mathematics and circuit analysis intended to give an electrical apprentice the necessary background to maintain and service industrial control equipment. It will include a study of capacitance, capacitive reactance, vectors, phasors, series AC circuits, power factor and three-phase systems. Trigonometry and pythagorean mathematics will be used in the computation of the phase relationships of the various quantities studied. (45)

**SKMT 101 Hydraulics and Pneumatics I 3 Sem Hrs**  
Prerequisite: MATH LEVEL 3. Focuses on the operation and function of fluids, pumps, compressors, valves, cylinders, motors, filters, and other components used in the power and control of machine tools, construction and agricultural equipment. Uses algebraic formulas, charts, and graphic symbols for design and diagnosis of basic circuits. (30-30)

**SKMT 102 Hydraulics and Pneumatics II 3 Sem Hrs**  
Prerequisite: SKMT 101. Advanced course in fluid power designed for machine repair, pipefitters and plumber trades. Analysis of common hydraulic and pneumatic components and circuits. Includes building of machine tool circuits and troubleshooting. Special systems such as hydrostatic transmissions and electrohydraulic servos, and ladder diagramming of pneumatic control circuits. Mathematics and graphic symbols used in troubleshooting. (45)

**SKMT 111 Metals 3 Sem Hrs**  
Prerequisite: SKMA 101 or MTH 097. Covers temperature measurement by color, hardness, strengths, fatigue properties, steels, plastics, cast iron, copper, brass bronze, aluminum, their applications with respect to wear, corrosion, and design. (45-0)

**SKMT 112 Ferrous Heat Treatment 2 Sem Hrs**  
Designed to acquaint students with various forms of heat treatment applied to plain carbon steels, cast iron, alloy tool steel, and stainless steel. Course will also include steel classification and machinability. (30)

**SKMT 151 Power Transmission 3 Sem Hrs**  
Prerequisite: MATH LEVEL 5: Identifies and explains safety rules, regulations, test procedures, installation, removal, and operation of belt drives, chain drives, mechanical couplings, and mechanical drive systems. Demonstrates the concepts of shaft alignment. Credit may be earned in SKMT 151 or MT 151 but not both. (30-15)

**SKMT 161 Industrial Rigging and Safety 2 Sem Hrs**  
This course is a study of the methods of safe transfer of loads, It provides comprehensive, easy-to-understand, and reliable information of the entire field of rigging operations. It also discusses techniques and methods to accomplish the rigger's task with the greatest safety for all of the workers on a project, as well as for passers-by and the public in general. "Safety is no accident" is stressed. (30)

**SKMT 171 Sheetmetal Layout I 3 Sem Hrs**  
Analyzes and develops geometrical structures, intersections by radial and triangulation methods of sheet metal layout, the drawing of development layouts, and the forming of actual models with sheet metal. Credit may be earned in SKMT 171 or RHA 142, but not both. (35-10)

**SKMT 172 Sheetmetal II 3 Sem Hrs**  
Prerequisite: SKMT 171. Continuation of Sheetmetal I. Projects involve fabrication of complex pieces to actual specification using tools common to the trade. (45)

**SKMT 173 Sheetmetal III 3 Sem Hrs**  
Prerequisite: SKMT 172. Continuation of Sheetmetal Layout II. Emphasis placed on the layout and construction of patterns found in the industrial plant. Special projects will be assigned. (20-25)

**SKMT 231 Fundamentals of Foundry Technology 3 Sem Hrs**  
Prerequisite: Foundry experience or permission of department. Provides an overview of all the components that make up a modern foundry. Participants will become familiar with the interrelationship between the metallurgy, melting, production engineering, core, molding, finishing, and reliability and quality control departments. Special emphasis is placed on how each department is dependent upon the other and what affect each has on the production of a quality product at a competitive cost, through the use of a statistical process control. (45)

**SKMT 241 Introduction to Monitoring Controls 3 Sem Hrs**  
Prerequisite: MATH LEVEL 4. Focuses on the theory of planned/predictive maintenance strategies and the familiarization of the technological tools available to support those strategies. Presents the theory and application of each of the technologies but is not intended to prepare for certification in any of the technologies discussed above. (45-0)

**SKOT 191 Machine Controls I 3 Sem Hrs**  
Present students with mechanical background the essentials of wiring and troubleshooting controls in production machinery. Studies AC/DC circuits, fundamentals of hydraulics and pneumatics as they pertain to machine control circuitry. Emphasizes relay ladder diagrams, simple debugging and nomenclature necessary to communicate with design engineers and other trades in the installation and troubleshooting of panel wiring. (45-0)

**SKOT 192 Machine Controls II 3 Sem Hrs**  
Prerequisite: SKOT 191. Machine Controls II is a continuation of Controls I with special emphasis placed on diagnostic troubleshooting techniques. Primary objective of the course is to enable maintenance personnel to discuss machine functions or malfunctions with machine and control system designers. The course will also benefit toolmakers and machine builders to understand the overall operation of complex machinery they build and/or assemble. (45-0)

**SKPH 101 Applied Physics 4 Sem Hrs**  
Prerequisite: Math Level 5. Introduces the basic physical principles involving mechanics, fluids, heat, conservation of energy, electricity, and sound. (60-30)

**SKPT 101 Industrial Piping 4 Sem Hrs**  
Basic sanitation principles, terminology, materials classification, drainage systems, waste disposal system, pipe sizing and layout. Industrial piping situations involving gasoline, acid plating solutions, gases, safety, code requirements. (60)

**SKPT 106 Pipefitters Handbook 3 Sem Hrs**

Prerequisite: MATH LEVEL 4 or SKMA 102 or MTH 097. Review of mathematical calculations including geometry and trigonometry. Includes: pipe bends, linear expansion of piping, tank capacities, leverage, methods of layout angles, pipe-fitting calculations, pipe-welding layout, and reference tables. Credit may be earned in SKPT 106 or WELD 112 but not both. (45-0)

**SKPT 111 Stationary Boiler Engineering I 2 Sem Hrs**

Orientation to power plant operations including boiler safety rules and regulations. General operating procedures for various types of boilers, uses and types of fuels and their sources; elementary chemistry of combustion. Credit may be earned in either SKPT 111 or CVI 1037 but not both. (30)

**SKPT 112 Stationary Boiler Engineering II 2 Sem Hrs**

Prerequisite: SKPT 111. This course includes boiler settings, combustion equipment, operation and maintenance of boilers, pumps, reciprocating steam engines, valve operating mechanisms. Credit may be earned in SKPT 112 or CVI 1038 but not in both. (30)

**SKPT 113 Stationary Boiler Engineering III 2 Sem Hrs**

Prerequisite: SKPT 112. Automatic boiler operation. Forced and induced draft systems. Steam turbines and auxiliaries, auxiliary steamplant equipment, cooling towers, boiler feed water treatment and heating. Credit may be earned in SKPT 113 or CVI 1039 but not in both. (30)

**SKPT 114 Stationary Boiler Engineering IV 3 Sem Hrs**

Prerequisite: SKPT 113 or permission of department. This course includes air compressors of the following types: centrifugal, rotary screw, large reciprocating compressors and drives; boiler feed water chemical treatment. Credit may be earned in either SKPT 114 or CVI 1040 but not both. (45-0)

**SKPT 121 Fundamentals of Refrigeration & A/C 3 Sem Hrs**

Examines the physical, gas, and chemical laws of refrigeration. Develops an understanding of the theory of heat, temperatures, pressures of gases and thermodynamics. Analyzes basic refrigeration cycle and components such as vacuum pumps, gauges, and (PT) Pressure Temperature Charts. Develops an understanding of units on safety and EPA Refrigerant Certification. Credit may be earned in SKPT 121 or in RHA 121, but not in both. (35-10)

**SKPT 122 Refrigeration and A/C Service I 3 Sem Hrs**

Prerequisites: SKPT 121. Focuses on concepts of common types of domestic refrigerators, dehumidifiers, and portable air conditioners. Develops an understanding of special references involving the essentials of construction of complete refrigeration systems. Presents theory and principles underlying repairing refrigeration appliances and practical shop work through classroom demonstrations and lab experiments. Credits may be earned in either SKPT 122 or RHA 122, but not in both. (35-10)

**SKPT 123 Commercial Refrigeration Flow Controls I 3 Sem Hrs**

Prerequisite: SKPT 122. Develops an understanding of basic skills necessary for servicing of commercial units such as walk-in coolers, reach-ins, display cases, and commercial icemakers. Analyzes refrigeration flow-control components, system components, and piping practices. Credit may be earned in either RHA 123 or SKPT 123 but not in both. (35-10)

**SKPT 124 Refrigeration and A/C Service II 3 Sem Hrs**

Prerequisite: SKPT 122. Develops understanding and operational skills in trouble shooting domestic refrigeration and air conditioning systems. Focuses on electrical components and system parts in frost-free, conventional and cyclematic units, and portable air conditioning units. Credit may be earned in either SKPT 124 or RHA 124 but not in both. (35-10)

**SKPT 126 Heating System Fundamentals 3 Sem Hrs**

Focuses on the principles of heating systems, types of fuels, electric heating, venting for combustion furnaces, and the methods of correct duct design through lecture and demonstration. Develops skills and basic knowledge of furnace components, testing, and operations. Reviews indoor air quality enhancements and basic mechanical codes for heating and gas piping installations. Credit may be earned in RHA 135 or SKPT 126 but not in both. (35-10)

**SKPT 225 Commercial Refrigeration II 3 Sem Hrs**

Prerequisite: SKPT 123. Develops additional skills and understanding in the servicing of commercial units such as walk-in coolers, reach-ins, display cases, and commercial icemakers. Focuses on electrical systems and diagrams. Analyzes single-phase systems and three-phase systems. Credit may be earned in either SKPT 225 or RHA 225, but not in both. (35-10)

**SKQA 140 Measurement Systems 3 Sem Hrs**

Introduces skill development in measurement analysis and measurement systems management. Emphasizes industrial measurement issues involving mechanical gauging and inspection instruments. Determines gauge and dimensional relationships along with describing the various types of industrial gauges and their usage. Explores gauge management issues and ISO 9000 requirements. Credit may be earned in either QA 140 or SKQA 140 but not in both. (45-0)

**SKTR 181 Introduction to Machining Processes 2 Sem Hrs**

Introduces the manufacturing facility. Utilizes safety, materials, hand tools, precision instruments, drill presses, lathes, mills, pedestal grinders, and saws. Studies fundamentals and procedures to provide an understanding of manufacturing processes. Credit may be earned in MS 113 or SKTR 181 but not both. (34-26)

**SKTR 182 Industrial Technology Machine Tools 3 Sem Hrs**

Introduces the manufacturing facility. Utilizes safety, materials, hand tools, precision instruments, drill presses, lathes, mills, pedestal grinders, and saws. Studies fundamentals and procedures to provide an understanding of manufacturing processes. Demonstrates greater knowledge of machine tool practices and applies that knowledge to educate others. Credit may be earned in MS 114 or SKTR 182 but not in both. (34-56)

**SKTR 183 Machinery's Handbook 3 Sem Hrs**

Prerequisite: Prerequisite: SKTR 182 and SKMA 103, or MS 113 or MS 114 and MT 110 or MTH 103. Focuses on learning how to use and understand the Machinery's Handbook. Credit may be earned in either SKTR 183 or MS 120 but not both. (45-0)

**SKWL103 Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting 3 Sem Hrs**

Addresses safety in use of equipment for oxy-fuel gas welding and cutting, and equipment set-up. Includes oxy-fuel welding of flat strips 1/8" or less in thickness, and cutting, beveling, and piercing plate and pipe in laboratory experience. Credit may be earned in one of the following courses WELD 103, SKWL 101, SKWL 103 but in more than one. (30-15)

**SKWL 104 Introduction to Shielded Metal Arc Welding 3 Sem Hrs**

Addresses safety in arc welding, welding terms and definitions, electrode selection, and welding joints. Includes striking an arc, running beads, pad welding, and fillet welds in lab. Credit may be earned in either WELD 104 or SKWL 104 but not in both. (30-15)

## Sociology

- SOC 157 Projects in Community Service 1 Sem Hr**  
Student volunteers will be assigned in groups to assist agency staff in programs in the tri-city area working with populations of need. Students will be assigned on the basis of preferred interests. Supportive seminar will provide structure and supervision for an experience in the field of human services. Students may elect to take SOC 157, 158 and 159, however, only a total of three (3) credit hours can be earned in these courses. (15-30)
- SOC 158 Projects in Community Service 2 Sem Hrs**  
Student volunteers will be assigned in groups to assist agency staff in programs in the tri-city area working with populations of need. Students will be assigned on the basis of preferred interests. Supportive seminar will provide structure and supervision for an experience in the field of human services. Students may elect to take SOC 157, 158, and 159, however, only a total of three (3) credit hours can be earned in these courses. (15-60)
- SOC 159 Projects in Community Services 3 Sem Hrs**  
Student volunteers will be assigned in groups to assist agency staff in programs in the tri-city area working with populations of need. Students will be assigned on the basis of preferred interests. Supportive seminar will provide structure and supervision for an experience in the field of human services. Students may elect to take SOC 157, 158, and 159, however, only a total of three (3) credit hours can be earned in these courses. (15-90)
- SOC 161 Projects in Cross-Cultural Learning 1 Sem Hr**  
Assigns student volunteers to either community agencies providing cross-cultural experiences or to an international work experience. Provides support seminars dealing with structure and background knowledge of the particular country involved. (A minimum of 30 hours volunteer placement is required). Credit may be earned in IHU 161 or SOC 161, but not both. (15-30)
- SOC 162 Projects in Cross-Cultural Learning 2 Sem Hrs**  
Assigns student volunteers to either community agencies providing cross-cultural experiences or to an international work experience. Provides support seminars dealing with structure and background knowledge of the particular country involved. (A minimum of 60 hours volunteer placement is required.) Credit may be earned in IHU 162 or SOC 162, but not both. (15-60)
- SOC 211H Principles of Sociology - Honors 3 Sem Hrs**  
Prerequisites: LEVEL 5 READING and LEVEL 3 WRITING and instruction of the Honors Office. Introduces the scientific study of society and social behavior including the basic concepts, theories, and methods of sociology. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in SOC 211 or SOC 211H but not both. (45-0)
- SOC 211 Principles of Sociology 3 Sem Hrs**  
Prerequisites: LEVEL 3 READING or LEVEL 3 WRITING. Introduces the scientific study of society and social behavior including the basic concepts, theories, and methods of sociology. Credit may be earned in SOC 211 or SOC 211H but not both. (45-0)
- SOC 212 Social Problems 3 Sem Hrs**  
Prerequisite: SOC 211. Analyzes contemporary social problems within the theoretical framework of social change, value conflicts, and social deviation and examines resulting implications for social policy. (45-0)
- SOC 215 Sociology of Minority Groups 3 Sem Hrs**  
Prerequisite: SOC 211. Studies prejudice and discrimination against minority groups, primarily in the United States, using the sociological approach. Emphasizes the analysis of both causes and solutions to the problems of prejudice and discrimination. (45-0)

- SOC 216 The Black Experience 4 Sem Hrs**  
Surveys Black life using an inter-disciplinary approach. Studies Black culture, power and politics, Black family, business and economic development, and Black psychology. Presents a historical analysis as well as an overview of contemporary research and/or thought in the field. (60-0)
- SOC 221 Marriage and Family 3 Sem Hrs**  
Prerequisites: SOC 211, or SOC 231, or PSY 211, or permission of instructor. Studies the family as an institution in society. Encompasses aspects of historical and cross societal evidence of this institution as well as contemporary American pairing and child rearing practices with a broad research approach. (45-0)
- SOC 230H Physical Anthropology and Archeology - Honors 4 Sem Hrs**  
Prerequisites: LEVEL 5 READING and LEVEL 3 WRITING and permission of Honors Office. Introduces the origin and evolution of humankind's physical and cultural development. Emphasizes the evidence and theories of human evolution and a survey of Old World and New World archeology. Provides opportunities to engage in Independent intellectual inquiry to foster deeper learning. Credit may be earned in only one of SOC 230, SOC 230H, BIO 230, or BIO 230H. (60-0)
- SOC 230 Physical Anthropology and Archeology 4 Sem Hrs**  
Prerequisites: READING LEVEL 3 or WRITING LEVEL 3. Introduces the origin and evolution of humankind's physical and cultural development. Emphasizes the evidence and theories of human evolution and a survey of Old World and New World archeology. Credit may be earned in only one of SOC 230, SOC 230H, BIO 230, or BIO 230H. (60-0)
- SOC 231H Cultural Anthropology - Honors 3 Sem Hrs**  
Prerequisites: LEVEL 5 READING and LEVEL 3 WRITING and permission of the Honors Office. Introduces humanity in its cultural setting. Emphasizes the study of diversity of non-industrialized cultures and the implications of that study for understanding our own culture. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in SOC 231, or SOC 231H, but not both. (45-0)
- SOC 231 Cultural Anthropology 3 Sem Hrs**  
Prerequisites: LEVEL 3 READING or LEVEL 3 WRITING. Introduces humanity in its cultural setting. Emphasizes the study of diversity of non-industrialized cultures and the implications of that study for understanding our own culture. Credit may be earned in SOC 231 or SOC 231H but not both. (45-0)
- SOC 233 Archaeology Field Methods 2 Sem Hrs**  
Provides a guided field experience in the basic techniques of land site analysis. Introduces commonly used methods of surveying and mapping; excavation; dating; artifact and ecofact identification and conservation; data recording, including photography and scaled drawing; and site interpretation. Examines criteria for selecting techniques appropriate to specific site conditions. Emphasizes the Michigan prehistoric and historic context. (30-0)
- SOC 242 Nanotechnology: Content and Context 3 Sem Hrs**  
Prerequisite: READING LEVEL 3 or WRITING LEVEL 3. Explores nanotechnology and its impact on society. Discusses the current status of nanotechnology and projected technologies and applications. Focuses on the societal implications of emerging technologies and their impact on social institutions. Includes how technological change in the past has altered societies, and considers how possible future changes predicted with the accomplishment of nanofabrication and other nanotechnologies may impact societies. (45-0)

**SOC 250 Introduction to Social Work 3 Sem Hrs**

Prerequisites: LEVEL 3 READING or LEVEL 3 WRITING. Introduces social work as a helping profession within the field of human services. Explores social work values, practice strategies, and helping skills in the context of the social welfare institution. Requires 45 hours of internship, which meets the experience requirement necessary for admittance to the social work program at transfer institutions. (45-45)

**SOC 265 Third World Development 4 Sem Hrs**

Using a multidisciplinary approach, describes and analyzes processes and conditions which created and maintain the "third world." Addresses population, physical environment, historical, political, social and economic factors. Explores and applies current concepts and development theories. Credit may be earned in SOC 265 or GEO 255, but not in both. (60-0)

**SOC 268 International Studies in Sociology 1-4 Sem Hrs**

The student will select a major institution of society for the purpose of comparative study. An analysis and comparison of that institution in preselected societies will be the major focus of the course. Includes classroom lectures, individual consultation and international field study. Expenses for field study must be borne by the student. By prior arrangement with appropriate faculty, students may also take International studies in the following disciplines: GEO 268, ECN 268, MGT 268 (or former GB268). (60-0)

**SOC 279 Introduction to Social/Behavioral Science Research 3 Sem Hrs**

Prerequisite: One of the following courses ECN 221, POL 103, POL 111, PSY 211, SOC 211, or permission of instructor. Introduces social and behavioral research utilizing a multidisciplinary approach. Shows how to formulate research questions, search the literature, select a research design, collect and analyze data, and draw useful conclusions. Credit may be earned in SOC 279 or SOC 280, but not in both. (45-0)

**SOC 280H Introduction to Social/Behavioral Science Research/Project - Honors 4 Sem Hrs**

Prerequisites: LEVEL 5 READING and LEVEL 3 WRITING and permission of the Honors Office and concurrent enrollment in SOC 281 and one of the following courses: ECN 221, POL 103, POL 111, PSY 211, SOC 211, or permission of the instructor. Introduces social and behavioral research utilizing a multidisciplinary approach. Shows how to formulate research questions, search the literature, select a research design, collect and analyze data, and draw useful conclusions. Requires a research paper. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in only one of SOC 280, SOC 280H, or SOC 279. (60-0)

**SOC 280 Introduction to Social/Behavioral Science Research/Project 4 Sem Hrs**

Prerequisite: Concurrent enrollment in SOC 281 and one of the following courses: ECN 221, POL 103, POL 111, PSY 211, SOC 211, or permission of instructor. Introduces social and behavioral research utilizing a multidisciplinary approach. Shows how to formulate research questions, search the literature, select a research design, collect and analyze data, and draw useful conclusions. Requires a research paper. Credit may be earned in only one of SOC 280, SOC 280H, or SOC 279. (60-0)

**SOC 281 An Introduction to SPSS 1 Sem Hr**

Prerequisite: Concurrent enrollment in SOC 280, or permission of instructor. Introduces the Statistical Package for the Social Sciences (SPSS), a comprehensive set of statistical tools for many types of data analysis. Emphasizes the basic procedures, commands, and tools of SPSS. Credit may be earned in SOC 281 or CPS 108 but not in both. (15-0)

**SOC 282H Seminar in Social Issues - Honors 3 Sem Hrs**

Prerequisite: LEVEL 5 READING and LEVEL 3 WRITING and permission of the Honors Office. An integrated study involving exploration and development of critical thinking, analysis and problem-solving skills with an interdisciplinary approach focusing on a selected social issue. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Same as IHU 282HW and may be taken for SOC or IHU credit but not both. (45-0)

**SOC 290-299 Special Projects in Sociology****SOC 300 Interviewing, Counseling, and the Helping Relationship 3 Sem Hrs**

Prerequisite: ENG 111 or ENG 111A or ENG 111H with a "C" or better. Establishes beginning social work interviewing and relationship skills as well as awareness of the use of self in the helping relationship. Presents specific interviewing strategies for generalist social work practice. Includes student participation in practice sessions using role plays, videotapes and self awareness exercises. Provides opportunities to practice formal and informal writing. Credit may be earned in PSY 300 or SOC 300 but not in both. (45-0)

## Spanish

**SPA 101 Hispanic Civilizations 2 Sem Hrs**

An introduction to some basic concepts concerning educational systems, religious thought, marriage customs, attitudes toward death, role of man and woman, historical highlights, cultural and natural resources, and relevant contributions in the area of art, music, literature, foods, and clothing of the Spanish-speaking world (Europe, the Americas, and the U.S.A.). Course will be conducted in English. (30-0)

**SPA 105 Conversational Spanish - Introduction 2 Sem Hrs**

Prerequisite: No previous formal study of Spanish. Designed to emphasize the acquisition of oral skills. Successful completion of SPA 105 and 106 is considered equivalent to the successful completion of Spanish One. (30-0)

**SPA 106 Conversational Spanish - Continuation 2 Sem Hrs**

Prerequisite: SPA 105 or permission of instructor. A continuation of SPA 105 with more emphasis on reading and writing Spanish. Successful completion of SPA 105 and 106 is considered equivalent to the successful completion of Spanish One. (30-0)

**SPA 109 Spanish for Health Care Professionals I 2 Sem Hrs**

Introduces basic conversational Spanish for health care professionals. Provides basic conversational skills and vocabulary appropriate to various job related situations. Practices correct pronunciation patterns by means of oral-aural practice, small group interaction, and role-playing situations. Introduces certain aspects of Hispanic culture and some of the differences between the Spanish and the English languages. (30-0)

**SPA 110 Spanish for Health Care Professionals II 2 Sem Hrs**

Prerequisite: SPA 109. Continues introduction to basic conversational Spanish for the health care professional. Practices basic conversational skills and vocabulary appropriate to various job related situations. Continues practice with pronunciation patterns by means of oral-aural practice, small group interaction, and role playing situations. Expands exploration of Hispanic culture and to some of the differences between the Spanish and English languages. (30-0)

**SPA 111 Spanish One 4 Sem Hrs**  
Prerequisite: Open only to students who have not had any formal study of Spanish. Students with previous formal study in Spanish need departmental approval. A diagnostic test will be given to determine placement in the most appropriate course in the sequence. Introduces the basic grammatical structures and vocabulary of modern spoken and written Spanish and to correct pronunciation patterns by means of oral-aural practice, small group interaction, reading of simple texts, and written exercises. Introduces certain aspects of Hispanic culture and to the differences between the Spanish and the English languages. (60-0)

**SPA 112 Spanish Two 4 Sem Hrs**  
Prerequisite: SPA 111 or 1 semester college-level Spanish course, or one year of High School Spanish, or permission of instructor. Continuation of SPA 111. A diagnostic test will be given to determine placement in the most appropriate course in the sequence. Continues to introduce the basic grammatical structures and vocabulary of modern spoken and written Spanish and correct pronunciation patterns by means of oral-aural practice, small group interaction, reading of simple texts, and written exercises. Continues to introduce certain aspects of Hispanic culture and the differences between the Spanish and the English languages. (60-0)

**SPA 211 Spanish Three 4 Sem Hrs**  
Prerequisite: Two years of high school Spanish or SPA 112. Continued emphasis placed on proper pronunciation habits and on application of grammatical structures of modern spoken and written Spanish by means of oral-aural exercises, conversations, reading of Spanish prose, and written exercises. As much as possible, this class is conducted in Spanish. (60-0)

**SPA 212 Spanish Four 4 Sem Hrs**  
Prerequisite: SPA 211 or three years of high school Spanish. continuation of Spanish Three. (60-0)

**SPA 268 International Studies in Spanish 1-4 Sem Hrs**  
Studies ancient, colonial and modern civilization in a Spanish-speaking country. Visits archeological and historical sites with unassigned time for individual interests. Student must meet all course and travel requirements in addition to paying tuition and expenses. (60-0)

**SPA 275 Introduction of Hispanic Fiction 3 Sem Hrs**  
Prerequisite: Ability to speak and read Spanish (completion of fourth year of high school Spanish or fourth semester of college Spanish, or permission of the instructor). Reading, research, and discussion based on a study of representative literature of the Hispanic world (Europe, North America, and South America). Students will read, discuss, and write about three selected novels and/or plays under guided supervision. Course will be conducted in Spanish. (45-0)

**SPA 290-299 Special Projects in Spanish**

## Social Science Interdisciplinary

**SSI 110 Introduction to Genealogy 1 Sem Hr**  
Introduces and broadly examines genealogy from an interdisciplinary perspective. Examines family and ethnic history and pursues family history for personal and professional growth. Covers research methods, record keeping, and problem solving. Emphasizes the use of archival and printed sources, and the Internet. Credit may be earned in SSI 110 or IHU 110 but not in both. (15-0)

**SSI 232 Exploring Human Nature 3 Sem Hrs**  
Prerequisite: READING LEVEL 6 or READING LEVEL 6B and WRITING LEVEL 4 or WRITING LEVEL 4B. Explores the question "What does it mean to be human?" from interdisciplinary perspectives. Identifies and discusses the relative importance of traits and characteristics that "make us human." Examines and evaluates major traditional and contemporary views of human nature and introduces alternative ways of understanding the self in relation to nature, society, religion, and the state. Credit may be earned in only one of IHU 232, SSI 232, or PSY 232. (45-0)

**SSI 234 World Religions 4 Sem Hrs**  
Prerequisites: READING LEVEL 3 or WRITING LEVEL 3. Introduces religion and the primary "living" religions of the world. Examines the principles and functions of religion, the origins and cultures of the world's major religions, and their beliefs and primary ritual practices. Discusses and critically examines how religious belief systems and practices influence the thoughts and behaviors of adherents in everyday life. Credit may be earned in SSI 234 or IHU 234 but not in both. (60-0)

**SSI 268 International Studies in Social Science 1-4 Sem Hrs**  
Provides interdisciplinary examination through the Social Sciences of the human experience in another social and cultural context. Requires travel and foreign study with travel expenses borne by the student. (15-60, 0)

**SSI 288 Exploring Diversity 2 Sem Hrs**  
Prerequisites: Level 3 Reading and Level 3 Writing. Provides a foundation in knowledge and application of issues and principles surrounding diversity. Provides an opportunity to explore, reflect and practice an interdisciplinary approach to the study of diversity. Credit may be earned in only one of the following: SSI 288, SSI 289, ED 388, ED 389, IHU 280 or IHU 281. (30-0)

**SSI 289H Exploring Diversity with project - Honors 3 Sem Hrs**  
Prerequisites: LEVEL 5 READING and LEVEL 3 WRITING and permission of the Honors Office. Provides a foundation in knowledge and application of issues and principles surrounding diversity. Provides an opportunity to explore, reflect and practice an interdisciplinary approach to the study of diversity. Includes completion of project. Provides opportunities to engage in independent intellectual inquiry to foster deeper learning. Credit may be earned in only one of the following: SSI 288, SSI 289, ED 388, ED 389, IHU 280 or IHU 281. (45-0)

**SSI 289 Exploring Diversity/With Project 3 Sem Hrs**  
Prerequisites: Level 3 Reading and Level 3 Writing; Provides a foundation in knowledge and application of issues and principles surrounding diversity. Provides an opportunity to explore, reflect and practice an interdisciplinary approach to the study of diversity. Includes completion of project. Credit may be earned in only one of the following: SSI 288, SSI 289, ED 388, ED 389, IHU 280 or IHU 281. (45-0)

**SSI 290-299 Special Projects in Social Science Interdisciplinary**

## Surgical Technology

**ST 100 Introduction to Health Care Service 3 Sem Hrs**  
Prerequisite: BIO 152 and BIO 153 or BIO 152 and concurrent enrollment in BIO 153. Presents the history of medicine, epidemiological methods, and current problems and trends in the health care system. Discusses selected global health care issues are discussed. Includes professional, legal, and ethical aspects of a multidisciplinary care system. (45-0)

**ST 207 Pharmacology in the Operating Room 2 Sem Hrs**  
Prerequisites: Admission to the Surgical Technology program and concurrent enrollment in ST 210, ST 220, ST 230, and ST 240. Introduces anesthetic agents and other drugs commonly used in the perioperative setting: their uses, methods of administration, physiologic effects, and hazards or untoward effects. Credit may be used in ST 107 or ST 207 but not in both. (30-0)

**ST 210 The Surgical Patient 2 Sem Hrs**  
Prerequisites: Admission to the Surgical Technology program and concurrent enrollment in ST 207, ST 220, ST 230, ST 240. Introduces basic concepts of operative patient care, such as preparation of a patient for surgery, patient transportation, surgical incisions, wound healing, operative records, special procedures in the operating room, and the legal, moral and ethical responsibilities of surgical care. Credit may be earned in ST 110 or ST 210 but not in both. (30-0)

**ST 220 Fundamentals of Surgical Technology 6 Sem Hrs**

Prerequisites: Admission to the Surgical Technology program and concurrent enrollment in ST 207, ST 210, ST 230, and ST 240. Demonstrates fundamental principles of operating room function: roles of surgical team members, sterilization and disinfection methods, aseptic technique, surgical instruments, sutures and equipment, electrical safety, patient positioning and preparation, draping the sterile field, and care of supplies. Develops beginning technical skills through laboratory practice; later, operating room observational experiences are provided. Credit may be earned in ST 120 or ST 220 but not in both. (45-120)

**ST 230 Surgical Anatomy 4 Sem Hrs**

Prerequisites: Admission to the Surgical Technology program and concurrent enrollment in ST 207, ST 210, ST 220, and ST 240. Presents comprehensive regional study of human anatomy as encountered during surgery. Provides the basis for studies of surgical pathology, operative procedures and practical skills of surgical patient care. Credit may be earned in ST 130 or ST 230 but not in both. (45- 45)

**ST 240 Operative Procedures 4 Sem Hrs**

Prerequisites: Admission to the Surgical Technology program and concurrent enrollment in ST 207, ST 210, ST 220, and ST 230. Studies selected commonly-performed types of surgical procedures. Discusses the pathology leading to surgical invention, the purposes of the surgery, problems which may arise, and the consequences of the surgery for the patient, in addition to the basic techniques utilized during the procedure and any special instrumentation and supplies. Credit may be earned in ST 140 or ST 240 but not in both. (60-0)

**ST 250 Clinical Externship 12 Sem Hrs**

Prerequisites: ST 207, ST 210, ST 220, ST 230, ST 240, each with a minimum C (2.0) grade, and consent of the Program Coordinator. Gains supervised clinical experience in hospital operating room suites. Evaluates each student's progress in the theoretical, behavioral, and practical application of concepts of surgical technology. Credit may be earned in ST 200 or ST 250 but not in both. (0-540)

**ST 251 Operating Room Seminar 3 Sem Hrs**

Prerequisite: ST 207, ST 210, ST 220, ST 230, and ST 240, each with a minimum "C" (2.0) grade, and consent of the Program Coordinator. Discusses patient-monitoring devices and diagnostic tests, abnormalities and correlations with surgical patient conditions, and surgery for traumatic injuries. Includes discussion of students' clinical experiences, the professional role of the Surgical Technologist, general review, and assigned research studies. Credit may be earned in ST 201 or ST 251 but not in both. (45-0)

**Technical Trades Interdisciplinary****TTI 110 Sustainable Building Principles 2 Sem Hrs**

Discusses sustainable (green) building concepts including rating systems such as LEED for Homes and NAHB Model GREEN Home Building. Follows green building from design and site selection to the finishes used, with special emphasis on current case studies, the economics of green building, benefits and barriers, and sources of information. (30-0)

**TTI 120 Energy Auditing and Weatherization 3 Sem Hrs**

Provides training in the principles of energy auditing and weatherization inspection. Covers the principles of energy, energy and the building shell, energy auditing, air leakage, insulation, windows and doors, heating and cooling systems, indoor air quality, lighting and appliances, and water heating. Provides training to conduct energy audits and use this data to form a cost effective weatherization plan. Begins steps in acquiring knowledge for those considering energy auditing certification. (35-10)

**TTI 290-299 Special Projects in Technical Trades Interdisciplinary****Welding Engineering Technology****WELD 101 Exploratory Oxy-Fuel Welding and Cutting 1 Sem Hr**

Addresses safety in the use of oxy-fuel gas equipment and equipment set-up. Explores oxy-fuel welding and brazing of flat strips 1/8" or less in thickness, and cutting plate in laboratory experience. Intended for non-welding majors. (10-5)

**WELD 102 Exploratory Shielded Metal Arc Welding 1 Sem Hr**

Addresses safety in arc welding, welding terms and definitions and electrode selection. Includes striking an arc and running boards.

**WELD 103 Introduction to Plasma, Carbon Arc, and Fuel Gas Cutting 3 Sem Hrs**

Addresses safety in use of equipment for oxy-fuel gas welding and cutting, and equipment set-up. Include oxy-fuel welding of flat strips 1/8" or less in thickness, and cutting, beveling, and piercing plate and pipe in laboratory experience. Credit may be earned in one of the following courses WELD 103, SKWL 103, or SKWL 101 but not in more than one. (30-15)

**WELD 104 Introduction to Shielded Metal Arc Welding 3 Sem Hrs**

Addresses safety in arc welding, welding terms and definitions, electrode selection, and welding joints. Includes striking an arc, running beads, pad welding, and fillet welds in lab. Credit may be earned in either WELD 104 or SKWL 104 but not both. (30-15)

**WELD 106 Exploratory Gas Tungsten Arc Welding 1 Sem Hr**

Discuss general safety, Gas Tungsten Arc Welding (GTAW) safety, welding terms and definitions, filler metal, electrode and gas selection. Includes laboratory exercises in starting an arc and running bead on plate. (10-5)

**WELD 108 Exploratory Gas Metal Arc Welding 1 Sem Hr**

Discusses general safety, Gas Metal Arc Welding (GMAW) safety, welding terms and definitions, electrode and gas selection. Includes laboratory exercises in starting an arc and running beads. (10-5)

**WELD 114 Intermediate Shielded Metal Arc Welding 8 Sem Hrs**

Discusses Shielded Metal Arc Welding (SMAW) safety, welding terms and definitions, welding electronics, and welding joints. Includes laboratory exercises in groove welds in fixed positions. (60-60)

**WELD 120 Beginning Industrial Blueprint Reading 2 Sem Hrs**

Includes manipulation of basic fractions and decimals as applied to the reading of blueprints, reading measuring instruments, basic geometric figures, drafting and blueprinting procedures, basic orthographic projection auxiliary and sectional views, detail and assembly drawings, dimensioning and tolerances, title block, change block, list of materials, and notes. Credit may be earned in WELD 120 or DRF 120 but not both. (30-0)

**WELD 122 Blueprint Reading for Welders and Fabricators 2 Sem Hrs**

Prerequisite: WELD 120 or DRF 120 or DRF 121 or SKDR 101. Applies principles specifically designed for welders and fabricators working with welding drawings. Interprets basic blueprint information, orthographic projection, assembly drawings, and geometric tolerancing. Places emphasis on welding symbols and welding drawings. Credit may be earned in WELD 122 or DRF 122 but not both. (30-0)

**WELD 220 Weld Qualification-Plate 4 Sem Hrs**

Prerequisites: WELD 114 and WELD 235 with a "C" (2.0) in each class or better. Teaches welding safety, welding terms and definitions, welding electronics, and AWS welder performance testing procedures. Includes qualification tests in the 3G and 4G positions as laboratory exercises. (15-45)

**WELD 224 Advanced Shielded Metal Arc Welding 8 Sem Hrs**  
Prerequisite: WELD 114 with a C (2.0) average. Discusses Shielded Metal Arc Welding (SMAW) safety, nominal pipe size and thickness standards, and welding joints. Includes laboratory exercises in groove welds on pipe in fixed positions. (60-60)

**WELD 226 Gas Tungsten Arc Welding 8 Sem Hrs**  
Discusses general safety, Gas Tungsten Arc Welding (GTAW) safety, welding terms and definitions, filler metal, electrode and gas selection, nominal pipe size and thickness standards, and welding joints. Includes laboratory exercises in starting an arc, running beads, pad welding, and groove welds on plate and pipe in fixed positions. (60-60)

**WELD 235 Gas Metal Arc Welding 8 Sem Hrs**  
Discusses general safety, Gas Metal Arc Welding (GMAW) safety, welding terms and definitions, electrode and gas selection, nominal pipe size and thickness standards, and welding joints. Includes laboratory exercises in starting an arc, running beads, pad welding, and groove welds on plate and pipe in fixed positions. (60-60)

**WELD 290-299 Special Projects in Welding**

## Water Environment Technology

**WET 110 Water Treatment Technologies 3 Sem Hrs**  
Studies conventional water treatment processes. Includes preliminary treatment, coagulation and flocculation, sedimentation and clarification, filtration, and disinfection. Includes tours of municipal water treatment facilities and related field discussions. Credit may be earned in WWT 110 or WET 110, but not in both. (45-0)

**WET 112 Wastewater Treatment Technology 3 Sem Hrs**  
Provides an introduction to the causes of water pollution, the reasons for treating polluted waters and the fundamentals of wastewater treatment. Studies the basic principles of treatment plant operation and the processes commonly used in pollution control facilities. Investigates terms, mathematics and problem solving techniques commonly used by wastewater treatment personnel. Credit may be earned in WWT 112 or WET 112, but not in both. (45-0)

**WET 210 Advanced Wastewater Treatment Technologies 3 Sem Hrs**  
Prerequisites: WET 112 and MATH LEVEL 6 or permission from instructor. Discusses wastewater treatment technologies beyond conventional processes. Includes the processes and techniques commonly used for advanced wastewater treatment, disinfection, solids stabilization and disposal, nutrient reduction and toxics removal. Includes field tours and discussion of safety and health, sampling procedures, record keeping, data preparation and report writing, and analytical procedures used to determine optimal plant operation and compliance with regulatory requirements. (45-0)

**WET 212 Advanced Water Treatment Technologies 3 Sem Hrs**  
Prerequisites: WET 110 and MATH LEVEL 6 or permission of instructor. Considers drinking water treatment technologies beyond conventional processes. Includes softening, ion exchange, activated carbon absorption, aeration, air stripping, and membrane processes. Includes participation in field tours and discussions on safety and health, sampling procedures, record keeping, data preparation, report writing and the analytical procedures used to determine and measure drinking water quality. (45-0)

**WET 215 Water Quality Analysis And Wet Instrumentation 3 Sem Hrs**  
Prerequisites: WET 110 and WET 112 and CHM 105 or CHM 111 and MATH LEVEL 6 or permission of the instructor. Investigates conventional water and wastewater laboratory test procedures, with particular emphasis on those analytical techniques that require an understanding and practical use of laboratory instrumentation. Water Quality Lab tests include BOD, TSS, temperature, DO, pH, conductivity, TDS, total and volatile solids, alkalinity, TRC, and others common to the daily operation of both drinking water and wastewater plants; includes discussions of basic stream ecology and applied environmental science principles. Instrumentation Lab includes the use of pH, millivolt and specific ion meters and probes and an introduction to Spectrophotometry, atomic absorption (AA), and gas chromatography/mass spectrometry (GC/MS). Includes field tours of municipal water and wastewater treatment facility labs and related field study discussions. (30-30)

**WET 220 Water Microbiology 3 Sem Hrs**  
Prerequisites: WET 210 and WET 212 and WET 215 or permission from instructor. Investigates more advanced water quality analytical techniques and the microbiology of water, including microscopic examination and identification of microorganisms commonly found in water supplies, water and wastewater treatment processes and polluted bodies of water. Water Quality Analysis lab work involves more advanced analytical procedures to determine nutrients, heavy metals and toxic materials. Focuses on lab safety and health, proper lab technique, representative sampling procedures, record keeping, data preparation and handling, and report writing. Continues field studies and analysis using Atomic Absorption and/or Gas Chromatography/Mass Spectrometer instruments. Includes lab work involving organisms commonly found in water and wastewater samples and with specific bacteriological analytical techniques. (30-30)

**WET 230 Water/Wastewater Utility Management 3 Sem Hrs**  
Prerequisites: WET 110 and WET 112 or permission of instructor. Investigates, in depth, the management elements of planning, organizing, staffing, directing and controlling as they relate to the management, supervision and administration of Water and Wastewater facilities. Presents management styles, problem recognition and problem solving techniques, budget and report preparation activities, federal and state regulatory issues, employee/employer (labor/management) relations and leadership topics. (45-0)

**WET 240 Applied Hydraulics 3 Sem Hrs**  
Prerequisite: MATH LEVEL 6 or permission of instructor. Studies applied hydraulic principles utilized in water distribution and wastewater collection systems. Includes pumpage, headloss, piping, valving, metering, cross connection control, storage, corrosion, and an introduction to hydraulic modeling. Discusses the principles of force, pressure, hydraulic grade line, and pump curves. Includes tours of municipal/industrial water pump stations and storage reservoirs and related field discussions. Credit may be earned in WWT 240 or WET 240, but not in both. (45-0)

**WET 244 Water/Wastewater Utility Equipment Maintenance 3 Sem Hrs**  
Prerequisite: WET 110 or WET 112. Provides the student with basic knowledge of mechanical equipment and repair techniques used in both water and wastewater facilities. Uses shop drawings and blueprints during disassembly and reassembly of a variety of mechanical devices. Studies pumps, valves, piping systems, and chlorination equipment. Credit may be earned in WWT 244 or WET 244, but not in both. (45-0)

**WET 246 Water/Wastewater Utility Electrical Maintenance 2 Sem Hrs**  
Prerequisite: WET 110 or WET 112. Studies basic electricity and instrumentation utilized in water and wastewater treatment facilities. Emphasizes the use of testing equipment to troubleshoot electrical and instrumental failures, maintenance problems, and evaluation of equipment performance. Includes discussion of energy conservation methods. Credit may be earned in WWT 246 or WET 246, but not in both. (30-0)

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**WET 265      Practicum In Water/Wastewater Treatment      4 Sem Hrs**

Prerequisites: Must be taken during final semester with permission of program director. Provides opportunities to perform technical procedures through structured field experience in water and wastewater treatment plants. Emphasizes gaining experience under plant managers and operating personnel with goal of developing organizational skills and responsibility necessary for entry-level employment. Uses rotation through assigned areas of experience in water treatment for 160 hours and continuous experience in wastewater treatment for 160 hours of in-plant services for total of 320 hours minimum required. Credit may be earned in WWT 265 or WET 265, but not in both. (3-320 OJT)

**WET 290-299    Special Projects in Water Environment Technology**

## Wind Turbine Technology

**WTT 100      Introduction to Wind Energy      3 Sem Hrs**

Prerequisite: MATH LEVEL 6. Introduces students to the fundamental concepts of turning energy from the wind into electricity. Explores the history and projected future of producing energy from the wind. Identifies the various scales of wind turbines, design types and requirements, and their major subcomponents. Performs a general analysis of sites where wind turbine installations are developing, along with analyzing Federal and State policies regarding the production of power from large-and small- scale wind turbines. (45-0)

**WTT 110      Climb Safety, Tower Rescue, and OSHA 10 Safety Training      2 Sem Hrs**

Prerequisite: MATH LEVEL 6 and LWT 165. Identifies industry safety standards and regulatory requirements for fall hazards associated with wind turbine maintenance activities. Identifies the function and use of basic fall protection equipment and also selects, inspects, assembles, and uses fall protection and rescue equipment. Upon completion of this course, participants will be capable of using a planned approach to tower climbing and rescues using state-of-the art techniques and equipment. (15-15)

**WTT 120      Wind Turbine Mechanical Systems      3 Sem Hrs**

Prerequisites: ET 120, MT 151, MT 220 each with a grade of "C" or better: Identifies and explains the operation and construction of wind turbine mechanical systems. Explains preventative maintenance activities and lubrication requirements while emphasizing potential mechanical failures that are associated with the maintenance activities. Provides opportunities to inspect, disassemble, and reassemble wind turbine mechanical systems. Demonstrates proper lubrication and preventative maintenance techniques along with applicable mechanical repair procedures. (30-15)

**WTT 215      Wind Turbine Blade Design      2 Sem Hrs**

Prerequisite: WTT 120 with a grade of "C" or better. Prepares for working with wind turbine blades to include terms, manufacture and identification of necessary repairs of wind turbine blades to ensure effective and efficient operation. Studies the facets of the blades of the wind turbine industry. Covers the aerodynamic basics of the turbine blades using the wind to convert one form of energy to another. Studies composite materials as they are used in the manufacturing process of wind turbine blades. Explores modes of blade failure and identification.(15-15)

**WTT 230      Wind Turbine Schematics      1 Sem Hr**

Prerequisite: WTT 120 with a grade of "C" or better. Identifies National and European schematic symbols, analyzes operating characteristics, and explains the operation of interrelated wind turbine systems. Covers applied schematics as well as the overall operation of a wind turbine. (15-0)

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**WTT 240      Power Generation, Transmission, and Distribution      3 Sem Hrs**

Prerequisite: ET122, ET140 each with a grade of "C" or better. Identifies and explains the regulatory requirements as well as the risks and hazards associated with working on high voltage systems. Applies three-phase electrical power generation characteristics to utility scale transformers, relays, capacitors, switchgear, and related components for both common Delta and Wye configurations. (45-0)

**WTT 280      Fundamentals of Data Acquisition      2 Sem Hrs**

Prerequisite: ET122, ET140 each with a grade of "C" or better. Examines how wind resource data is collected and analyzed for use in the development of wind powered generation of electricity. Identifies and explains the function and operation of sensors and transducers. Develops skills of selecting, connecting, and operating sensors and transducers in an industrial environment in order to perform maintenance actions. (15-15)

**WTT 290-299    Special Projects in Wind Turbine Technology**

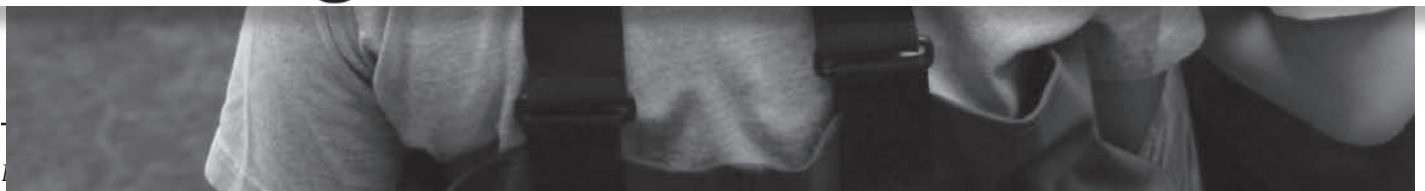


Natural Resources  
and Agriscience



Section VI

# Regulations and References





# Student Rights & Responsibilities

In joining the academic community, students enjoy the right of freedom to learn and share the responsibility in exercising that freedom. Students are expected to conduct themselves in accordance with standards which are designed to perpetuate the educational purposes of the College.

The College has developed procedures and channels by which students may have a fair and objective hearing for their grievances in regard to academic evaluation, students' rights and privacy, and disciplinary action. Students have the right of protection against prejudice, capricious academic evaluation, or loss of personal rights and freedom. At the same time, however, students are responsible for maintaining standards of academic performance established for each course in which they are enrolled and for following the rules of conduct established by the College.

## Association and Expression

- A. Students are free to organize and join associations to promote their common interests. In order to use College facilities and resources and to request financial assistance, student groups are required to register with the Student Activities Office, submitting a statement of purpose and a current list of officers or designated representatives. Groups are also encouraged to choose a faculty or staff advisor to assist them.
- B. Students and student organizations are free to examine and discuss all questions of interest to them and to express opinions publicly and privately, including their views on issues of College policy.
- C. Generally, students or student organizations may distribute written material without prior approval. Hand-to-hand distribution shall be permitted in areas of public passage (commons, hallways, sidewalks, etc.), providing distribution does not interfere with normal College activity or routine. Posting and other types of distribution shall be limited to those places established by written College regulations. For more information see "Public Information Posting Guidelines" in this section.
- D. Students and student organizations are free to invite speakers, to hear any person, and to plan programs of their own choosing subject only to those written requirements established by the College to ensure proper scheduling and use of facilities.
- E. No policy, procedure, or guideline of Delta College shall discriminate on the basis of the political, social, or other opinions of students individually or collectively.
- F. No record will be kept by Delta College which reflects the lawful political activities or beliefs of students, unless requested by the student in writing. Information about a student's views, beliefs, and/or political associations acquired by the faculty or other College employees in the normal course of their work will be considered confidential and will not be disclosed without the knowledge and consent of the student unless under legal compulsion.
- G. Nothing in this policy shall be construed to imply approval or endorsement by Delta College of the views expressed by students or student organizations.
- H. Nothing in this policy shall be construed to relieve any person of obligations under Regulations and Rules of Conduct.

## Regulations and Rules of Conduct

### I. Introduction

- A. **General Responsibility:** Delta College has the responsibility to adopt and enforce rules which are consistent with Delta College goals and operations and to establish due process procedures in disciplinary cases.

- B. **Authority to Establish Standards of Conduct:** Standards of conduct are established by rules of the College, as adopted by the Board of Trustees, and made known through College publications or by notices distributed or prominently posted on College Bulletin Boards; and by laws of the United States, State of Michigan and County of Bay (public laws).

Except in the case of interim or emergency rules as granted by Michigan Public Act No. 26 of 1970, such regulations shall be established and amended with the advice of the College Senate. Final authority is through either the Delta College Board of Trustees or the laws of the United States, State of Michigan, or County of Bay.

- C. **Individual Responsibility:** An individual having an institutional relationship to Delta College (members of College community) is automatically placed under the rules of the College. "Institutional relationship to the College" means any connection of employment, enrollment, or service existing between any person and Delta College. As used herein, this phraseology is intended to prevent the application of these rules to purely personal or social relationships between or among students, faculty members, administration, or staff members outside the College proper. It is therefore important for all members of the College community to familiarize themselves with the rules and regulations affecting them.
- D. **Effect of Violating Rules:** A member of the College community violating any of the rules of the College or a public law, on-Campus or off-Campus, at a Delta College-sponsored activity, is subject to disciplinary action by Delta College that is appropriate to the nature of the offense. Such disciplinary action will be taken in accordance with the procedures governing cases of violations as outlined in the Delta College judicial process. For more information see "Student Complaint and Hearing Process" in this section.



E. **Reports of Violations:** Reporting of violations shall be within the province of all members of the College community, because they have a common responsibility in maintaining an orderly and efficient community for their mutual benefit. Violations may fall in one of several categories: 1. Minor offenses which are dealt with by reprimand; 2. Violations by students which are to be reported to the Office of the Vice President of Student Services; 3. Violations by faculty or staff members which are to be reported to the Office of the President; and 4. Civil or criminal violations which are to be reported to the Department of Public Safety.

F. **Severance Provision:** If any of the foregoing rules or any part of any such rule shall be adjudged invalid by a court of competent jurisdiction, then such adjudication shall not affect the validity of these rules as a whole or any provision or part of any such rules not so adjudged invalid.

## II. Rules and Regulations

A. **Physical Force:** No member of the College community shall use physical force, threaten physical force, or use intimidation against any person engaged in an activity properly undertaken as part of an institutional relationship of the College except as permitted under normal law enforcement procedures.

B. **Disruption:** No member of the College community shall interfere with a College function by depriving any person of needed safety, quiet, or other physical conditions of work or study.

C. **Interference:** No member of the College community shall interfere with the free movement of any person engaged in an activity properly undertaken as part of an institutional relationship to the College.

D. **Compliance:** In keeping with the system of voluntary compliance that underlies the College Regulations and Rules of Conduct, no member of the College community shall fail to follow the reasonable instructions given by an appropriate College official to cease specified conduct, if such conduct threatens disruption or interference with the rights of others, College discipline, College functions, and/or order in the College community.

E. **Identification:** No member of the College community shall refuse to provide identification when requested to do so by an identified employee of the College.

F. **Forbidden Occupation:** No member of the College community shall, subsequent to reasonable notice to leave given by the College President or the authorized designee, continue occupation of any College facility or property which is under the direct control or responsibility of the College, especially if such occupation interferes with a College function or risks injury to a person or property.

G. **Facility Entry and Usage:** No member of the College community shall gain or attempt to gain unauthorized entry to or make unauthorized use of the College facilities or property.

H. **Property:** No member of the College community shall damage, deface, destroy, steal, or misappropriate the property of the College, any member of the College community, or any visitor to the College Campus.

I. **Unauthorized use of College Credit, Property, Etc.:** No unauthorized member of the College community shall use the College telephones, postal machines and meters, duplicating machines, computer, motor vehicles, or other equipment. This provision shall be deemed to also include College billing, charging, and credit card numbers utilized for communications or transportation purposes. Further it shall be a violation for any member of the College community who has not been issued a key by the College to possess or use College keys for any purpose whatsoever.

J. **Counterfeiting, Altering, and Copying:** No member of the College community, shall falsely make, forge, manufacture, print, reproduce, copy, tamper with, or alter any writing, document, record, or identification used or maintained by the College or by members of the College community.

No member of the College community shall knowingly possess, display, or cause or permit to be displayed any writing, record, document, or identification form used or maintained by the College or by members of the College community, knowing the same to be fictitious, altered, forged, counterfeited, or made without authority.

K. **Confidentiality of College Records:** No person shall inspect, investigate, or use College files (i.e., counseling, financial aid, placement, records, registration) without proper College authorization.

L. **Firearms and other Dangerous Materials:** The possession or use of firearms, firecrackers, explosives, toxic or dangerous chemicals, or other lethal weapons, equipment, or material is not permitted on College property at any time except when specifically authorized by the College for educational purposes or when firearms used for recreational purposes and transported through the Campus meet the regulations of the Department of Public Safety.

M. **Alcoholic Beverages:** No member of the College community shall sell, be under the influence of, possess or consume beer, wine, or other alcoholic beverages on College property, or any property which is under the direct control or responsibility of the College. This regulation shall not apply to the President's home. This rule may be suspended from time to time by authorization of the President.

N. **Drugs:** No member of the College community shall possess, sell, distribute, be under the influence of or use any controlled substance in either the refined or crude form, except: (1) controlled substances for personal usage, and these must be under a current prescription of a licensed physician, or (2) those specifically authorized to Delta College by Federal or State authorizing agencies for educational purposes. Nor shall any member of the College Community possess property which is used, or intended for use, as a container for any controlled substance, except where prescribed or authorized as described in this paragraph.

O. **Tobacco Free Policy:** Effective August 1, 2007, Delta College became a tobacco free campus. Smoking and use of tobacco products will not be permitted anywhere on the campus; including centers, campus buildings, sidewalks, parking lots, building entrances and common areas, and in College-owned vehicles. The Administration shall fully implement this policy and all applicable laws, regulations, and local ordinances related to smoking and tobacco use.

P. **Selling, Soliciting, and Distributing:** Any person who wishes to distribute, solicit, or sell information, materials, goods, or services not within the normal College activities and routine, must have the written permission of the Vice President of Student Services or the Vice President of Business and Finance or their designee.

Q. **Private Business Ventures:** Delta College facilities such as offices, computers, copiers, etc. are not to be used for private business ventures. Also, Delta College's name is not to be associated in any way (such as use of letterhead, e-mail or return address) with private business ventures.

R. **Animals:** People may not bring animals on Campus or into College buildings. Leader dogs and animals used for educational purposes are exceptions; however, all animals must remain under the control of their owners and be properly licensed and medically treated as required by law.

S. **Federal, State, and Local Laws:** Violations of Federal, State, or local laws on-Campus, or off-Campus in connection with College-sponsored activities shall constitute violations of College rules.

**Questions regarding the rights and responsibilities of Delta College students and guests should be addressed to the Vice President or Dean of Student and Educational Services, 686-9339 or 686-9512.**



## Integrity of Academic Work

### I. Statement of Values

The principles of truth and honesty are fundamental to a community of learners. All members of the Delta College Community are expected to honor these principles and are responsible for maintaining the integrity of academic work at the College.

Plagiarism or any misrepresentation of work, unsanctioned collaboration, use of prohibited materials, and participation in any form of dishonesty all constitute violation of this policy.

Violations of this policy will result in the actions and consequences specified within this policy.

### II. Faculty determine standards of integrity for academic coursework.

Examples of academic dishonesty that would constitute violations of this policy include, but are not limited to, the following:

- A. Plagiarism<sup>1</sup>
- B. Cheating on tests, quizzes, or any assignments
- C. Fabrication
- D. Aiding and abetting dishonesty
- E. Falsification of records and official documents

### III. Faculty and Staff Responsibilities.

Faculty should do the following, where applicable and when appropriate:

- A. Provide clarification about the nature of academic dishonesty.
- B. Clarify expectations for homework, assignments, collaborative student efforts, research papers, exams, etc.
- C. Identify any specific style/format requirements for assignments.
- D. Communicate ethical and professional standards associated with courses and programs.
- E. Honor principles of truth and honesty and in so doing protect the validity of college grades.

<sup>1</sup>Plagiarism is defined as, "the false assumption of authorship; the wrongful act of taking the product of another person's mind and presenting it as one's own." As developed by Alexander Lindey in "Plagiarism and Originality" (N.Y.: Harper, 1952)

### IV. Student Responsibilities and Rights

Delta College Students are responsible for understanding/following

- A. All provisions of this policy including, but not limited to, examples under I and II above.
- B. Specific course policies for academic work.
- C. Other College policies as specified in the current Delta College Catalog.
- D. Commonly understood principles of personal honesty and integrity.

The student may appeal, through the Disputed Final Grades policy, any grade affected by a charge of academic dishonesty.

### V. Process for Policy Violations by Students

A. Faculty may use their discretion and judgment in any suspected violation of this policy, including limiting action to a warning. If the faculty member determines that this policy has been violated, then the process outlined below will be followed.

1. If the faculty member decides that a violation of this policy will not affect the student's assignment or course grade, the faculty member will explain the violation to the student and warn the student of future consequences for similar behavior.
2. If a faculty member decides that a violation of this policy will affect the student's grade in the course, then the faculty member will explain the decision in writing to the student within a reasonable time frame. The faculty member will then send copies of the written explanation to the appropriate Division Chair, Academic Dean, and the Chief Academic Officer of the College.

Both the Division Office and Academic Office will maintain permanent records of these violations.

B. When a violation is reported to the Academic Office, the Chief Academic Officer of the College will determine appropriate consequences beyond the course grade for the student, including, particularly in the case of a repeated violation of this policy, possible dismissal from the College.

### VI. Process for Policy Violations by Delta College Faculty and Staff

Suspected violations will be reviewed by the Senate President and the College President and may be investigated by an ad hoc committee appointed and charged by them. The membership of any such committee will represent the appropriate College groups. After an investigation of suspected violation, this committee may recommend further action to the College President.

## Disruptive Students

Disruptive conduct taints the educational atmosphere and may endanger the safety of students and staff. Accordingly, when student conduct on campus creates a serious enough disruption such that the only reasonable solution is removal of the student, a faculty/staff member may temporarily suspend or permanently expel that student from class/campus.

This policy and accompanying procedures assumes that the faculty/staff has made every attempt to resolve this issue with the student through such informal methods as individual conferences and/or written messages. If these informal methods have not met with success, the following formal procedures will be implemented.

1. The student will be verbally warned by the faculty or staff member the student's behavior is considered to be disruptive (describe the behavior to which the faculty/staff member is referring) and that if the student continues the behavior, s/he will be asked to leave the class/building.
2. If the student persists with the disruptive behavior, the faculty/staff member can then ask the student to leave the class or campus. At this time the faculty/staff must warn the student that failure to leave may result in police intervention. The faculty/staff must indicate whether the suspension is just for that day or if the student must appeal to the appropriate Division Chair to reenter the class. In other words, clarify for the student whether the suspension is temporary or permanent.
3. If after the previous verbal warnings the student continues to demonstrate disruptive behavior, the faculty/staff will summon the appropriate police agency who will have the option of arresting the student for criminal trespass, if necessary. The faculty/staff member's request for the student to leave provides the police agency with sufficient probable cause to effect an arrest.
4. If as a result of faculty/staff member's request for expulsion the student leaves the classroom/campus, the faculty/staff will notify their Division Chair or immediate supervisor in writing within 24 hours of the incident. The written report must include the student's identity and the behavior that was considered to be disruptive. Sufficient detail must be provided to allow the Chair/Supervisor to assess whether or not the policy was followed. Please note that the written report is only necessary when considering expulsion. Temporary suspension is handled informally by the faculty/staff member.
5. The Division Chair/Supervisor must immediately contact the student by phone, with a follow-up through registered mail, notifying them of the opportunity to explain the incident from the student's point of view. In addition, this notice will include the date by which the student must respond back to the Division Chair (or designee) or else forfeit their right to appeal the expulsion. Generally, the student will be given three class\* days to respond in person, by phone, or mail (postmarked). Within 24 hours of the conclusion of the meeting to review the suspension, the Chair/Supervisor will decide if the removal was justified or if the student should be reinstated. The Chair/Supervisor may find it necessary to consult with other College employees, students, or records for additional information upon which to base their decision. The Chair/Supervisor may support or deny the removal, or make other arrangements for the student.
6. The decision of the Chair/Supervisor will be conveyed to the student and the faculty/staff member who caused the removal as soon as

possible, either in person or by phone. A written confirmation of the decision will be sent to both the staff member and the student within three class days. Within three class days of the receipt of the written decision, the student or the staff member may appeal in person, by phone, or in writing the decision to the appropriate Dean/Supervisor (identified in the written decision by the Chair); whose decision will be final.

7. It is important to emphasize that each step of the process should proceed as quickly as possible, while maintaining fairness and objectivity.

\*For the purpose of this policy, class days include only Monday-Friday when Delta College classes are in session.



## Student Complaint and Hearing Process

Every effort will be made to first resolve conflicts through informal discussions with the involved parties. If this fails, a written complaint may be filed as outlined below. In computing any time limit specified under this process, Saturdays, Sundays, official school closings, and holidays will be excluded. The Vice President of Student and Educational Services has the authority to adjust time lines as deemed necessary because of extraordinary circumstances.

### A. Complaint

1. A complaint alleging violations of a College rule and/or regulation may be filed in writing against any student through the Department of Public Safety on a State of Michigan Standard Incident Report Form, UD-107. Complaints must be filed within a reasonable length of time. This report shall then be forwarded to the Office of the Vice President of Student and Educational Services (or designee) for action.
2. After consultation with the student involved and after undertaking other investigations that may be appropriate under the circumstances, the Vice President of Student and Educational Services or designee shall take one of the following actions:
  - a. Dismiss the complaint.
  - b. Conduct an informal hearing and invoke a sanction if the alleged violation is admitted.
  - c. Refer to a Case Review Officer selected from a list prepared by September 1 each year by the Office of the President and named within three working days of the receipt of the complaint, barring unforeseen circumstances.
3. The action taken by the Office of the Vice President of Student and Educational Services (or designee) will be communicated to the student in writing.

### B. Case Review

Purpose: To consider complaints referred by the Office of the Vice President of Student and Educational Services (or designee) and to recommend appropriate action to be taken by the Office of the Vice President of Student and Educational Services.

1. The Case Review Officer will conduct a case review, normally including discussion with all parties involved, prepare a written report, and recommend that one of the following actions be taken by the Office of the Vice President of Student and Educational Services:
  - a. Dismiss the complaint.
  - b. Invoke a specific sanction.
  - c. Activate the Formal Hearing Panel.
2. The Case Review Officer will make a recommendation within five working days of receiving the complaint, barring extenuating circumstances.
3. Action by the Office of the Vice President of Student and Educational Services shall be communicated to students in writing.

### C. Formal Hearing Panel

1. Members of the Formal Hearing Panel shall serve for one year (September 1 through August 31 of the following year) and include:
  - a. A non-voting chair designated by the Office of the Vice President of Student and Educational Services who has not previously ruled on the case.
  - b. Three students selected by the Student Senate Committee.
  - c. One faculty selected by the Faculty Executive Committee.
  - d. One staff member selected by the Senate President.
  - e. A sufficient number of alternates shall be designated to assure full panel representation when a hearing is scheduled.

2. The Formal Hearing may be requested:

- a. By the student filing a written request with the Office of the Vice President of Student and Educational Services within five working days following notification of the action taken
- or
- b. By the Office of the Vice President of Student and Educational Services.

3. Within 10 working days of the receipt of a written request for a formal hearing, the Office of the Vice President of Student and Educational Services shall convene the Hearing Panel. The student will be advised of the date, time, and place of the scheduled hearing.

4. The Formal Hearing Panel will review all previous actions and conduct a formal hearing. Within 8 working days, barring extenuating circumstances, the Panel shall make a ruling specifying its findings.

Such ruling may result in:

- a. Confirmation of the action of the Office of the Vice President of Student and Educational Services.
- b. Dismissal of all or a portion of the complaint.
- c. Instructions to the Office of the Vice President of Student and Educational Services to invoke a specific sanction or initiate other disposition as the Hearing Panel deems appropriate under the circumstances.

5. The decision of the Formal Hearing panel will be communicated to the student in writing

6. The decision of the Formal Hearing Panel shall be final except that action involving suspension or dismissal from the College must be ratified by the Office of the President before implementation.



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## Public Information Posting Guidelines

Students wishing to post information (i.e. ads for sale or rent of personal property, notices of Delta meetings and special events, announcements of Delta student activities, etc.) are requested to take the information to Office of Student Engagement (A003) for approval.

The complete guidelines including who may post, what may be posted and where to post, are available at A003 or at 686-9865.

## Electronic Resources Access and Use Guidelines

1. By accessing College electronic information systems you assume personal responsibility for their appropriate use and agree to comply with all applicable College policies and procedures as well as external networks' policies and procedures, local, state and federal laws and regulations.
2. You are solely responsible for your access and use, and may not transfer or share your passwords or account except as expressly authorized in writing by the Executive Director of the Office of Information Technology (OIT).
3. Delta College electronic resources are provided to support the college mission. Uses such as private business use or use for personal gain, non-profit activities, advertising and fundraising not related to the college are prohibited. Excessive personal use for activities such as game playing, financial transactions or communicating with family and friends is also prohibited.
4. Uses that threaten the integrity of any system or its contents, the function of resources accessed through the system, the privacy or safety of anyone, or that are illegal are forbidden.
5. Misuse can lead to penalties up to and including loss of system access, employment termination or expulsion from classes or from the college. In addition, some activities may lead to risk of personal legal liability, both civil and criminal. Use common sense: the same rules of courtesy, ethics, morality and law apply here as elsewhere.
6. All persons accessing the College's electronic resources are covered by these guidelines, whether faculty, staff, students, trustees, volunteers, emeritus or retired persons, guests, or any other user.
7. All electronic resources of the College are covered by these guidelines, including without limitation all networks, supporting backbones and links, stand-alone computers, output devices, including printers, shared computers, and connecting resources of any kind, including any external networks.
8. You should not assume that anything received, sent or stored on any of these systems is private. The College generally, and system administrators specifically, will respect the privacy of users. However, these systems are not provided or intended for sending or receiving private or confidential communications. If material is stored electronically rather than in paper files, it must be just as accessible to others who need access to those files as any paper file would be. In addition, system administrators have access to all mail and user access requests and will monitor them as necessary to assure efficient performance and appropriate use. If access discloses improper or illegal use, it may be reported and penalized. Legal process, including requests for information under the Freedom of Information Act, may also compel disclosure.
9. Each user must respect the privacy of every other user. You may not attempt to access, copy, modify or otherwise view or use the passwords, data, or electronic resources of any other user, except as expressly authorized in writing by the Executive Director of the Office of Information Technology (OIT).
10. You may not represent yourself as someone else, or send messages that appear to originate from someone else ("spoofing").
11. You have free speech and academic freedom rights in electronic forms of communication as you do in other forms of communication. However, your responsibilities may be somewhat different because of the nature of the medium. Electronic messages may be accessible

to unintended audiences. The College will not impose restraints or monitor content of communications except as required by applicable law and system administration requirements. Your communications are subject to such laws, including those regarding others' rights to privacy, licensing or copyright, prohibition of defamation, or prohibition of harassment or stalking, and the consequences of violations can be severe.

12. Your access to resources of the College, including access to electronic resources, is a privilege and not a right.
13. You must observe classroom and computer lab policies and procedures, and comply with instructions of support staff in the computer labs and OIT staff. In particular, you will vacate workstations or the facility and will surrender other resources (such as printers and software) promptly when asked to do so both at closing times and when necessary to permit access by others.
14. You should assume that anything you access may be copyrighted. Absence of a © notice does **not** mean that the material is not copyrighted. That means that, for example, before you download a document, an image, or any other media to your web page, you should ask the author's permission.
15. You have full responsibility for statements made via the electronic resources of the College, including statements on any personal web pages. Such statements do not represent the opinions of the College or any other member of the College community. Your personal web page should include the following disclaimer at the bottom of the first page: "This space is provided as a service by Delta College. Views expressed do not necessarily reflect those of the College."
16. The following list is provided as an illustration, but not an exhaustive list, of the kinds of uses that could subject you to penalties by the College or by outside authority: • Harassment, such as repeated unwanted communication or communication that threatens • Violation of others' privacy • Destruction or damage to equipment, software or data of the College or others • Violation of computer system security • Use of computer accounts or access codes without permission, or permitting another unauthorized person to use accounts or access codes • Violation of copyright or software license agreements • Negligent or deliberate inappropriate use of the resource in ways that degrades service for other users, including viruses, Trojan Horses, worms and the like • Academic dishonesty • Violation of College policy or local, state or federal law • Using computer resources for any purpose which is criminal, unethical, dishonest, damaging to the reputation of the College, or likely to subject the College to liability. • "Spamming" or the non-commercial equivalent, defined as sending a large volume of unsolicited e-mail which is irrelevant to most if not all recipients.
17. Consequences and process will depend on the violation. When required to protect others or system integrity, immediate termination, removal of pages or other materials, or suspension of user privileges may occur. Otherwise, the user will normally be notified of the alleged infraction and will have an opportunity to respond to a person or body separate from system administration, and will have an opportunity to appeal. The process used will depend on the nature of the alleged infraction, and could be heard under the Judicial Process, Senate Policy 2.065; Student Violation of College Rules and Regulations, Senate Policy 8.045; Disciplinary Action, Support Staff Policies and Procedures 1.12; Affirmative Action or Sexual Harassment complaint procedures, or other appropriate college procedures, or could be referred to outside legal authorities where violations of local, state or federal law are involved. Penalties imposed may range from warnings to suspension of privileges for a temporary, definite, or indefinite period, to termination of employment or expulsion from classes or from the College, to civil suit or criminal prosecution and the penalties resulting from those actions.
18. Delta College reserves the right to monitor, manage, and control the usage of these resources and to make changes in these guidelines without prior notice.



# Safety and Security

## Law Enforcement on the Campus

The Delta College Department of Public Safety & Training is primarily responsible for providing safety and security services, enforcing traffic and parking regulations, and conducting criminal and accident investigations. The Department is located in the Main Building, N101, across from the East Main Entrance. The Department of Public Safety & Training is open during normal hours of business, excluding holidays, at which time officers of the Department may be dispatched through Bay County Central Dispatch, for emergencies **only**.

The police officers of the Delta College Department of Public Safety & Training are vested with full peace or law enforcement authority and arrest powers on campus, granted by state statute to the Board of Trustees of Delta College. These police officers are trained in the same manner as all other law enforcement officers in the State of Michigan and are certified as such through the Michigan Commission on Law Enforcement Standards. The officers also receive training in basic first aid and personal safety. The Department of Public Safety & Training maintains a close working relationship with federal, State, county, and other local law enforcement agencies and appropriate elements of the criminal justice system.

## Reporting Criminal Activities/Emergencies

To report a crime or an emergency, you should call the Delta College Department of Public Safety & Training at 686-9111 or for intra-College calls, dial Ext. 9111. A crime or emergency which occurs off-Campus should be reported to the police department having legal jurisdiction for that area. If you are unsure which department has jurisdiction, call 686-9111.

The Department of Public Safety & Training maintains two-way radio contact with Bay County Central Dispatch, providing access to assistance and support from the Bay County Sheriff Department, the Michigan State Police, Saginaw Valley State University Police Department, the Frankenlust Township Fire Department, Bay Medical Ambulance, and the Delta College Facilities Management Department.

## Maintenance/Security of Campus Facilities

Delta College maintains a very strong commitment to Campus safety and security. Every effort is made to ensure that the Campus facilities, buildings, and grounds are maintained in such a manner as to promote safety and reduce criminal opportunity.

Exterior lighting is a very important part of this commitment. The College attempts to maintain adequate exterior lighting in parking lots as well as on the pedestrian walkways. Members of the College community are encouraged to report any exterior lighting deficiencies to the Department of Public Safety or the Facilities Management Department. Written surveys of exterior lighting are taken by the officers of the Department of Public Safety & Training or by Facilities Management employees on a monthly basis.

Exterior doors on Campus buildings are locked and secured each evening by Department of Public Safety & Training personnel. Facilities Management personnel are responsible for the unlocking and opening of these exterior doors. Door and security hardware operating problems are also reported by these personnel on a daily basis. Problems in exterior door locking mechanisms should also be reported to the Department of Public Safety & Training or Facilities Management Department.

Parking lots on Campus are actively patrolled by Department of Public Safety & Training officers and the Department also has a variety of alarms (including fire, intrusion, hold-up and trouble) to assist the officers in patrolling and monitoring the Campus.

## Crime Statistics

Delta College believes that an informed public is a safety-conscious public. Crime statistics, found at [www.delta.edu, AtoZ index, Public Safety](http://www.delta.edu, AtoZ index, Public Safety), are provided in compliance with the "Jeanne Cleary Disclosure of Campus Security Policy and Campus Crime Statistics Act."

## Sexual Harassment

Sexual harassment is unwelcome sexual advances, requests for sexual favors, and other conduct or communication of a sexual nature when:

- Submission to such conduct or communication is made a term or condition, either explicitly or implicitly, of a student's employment or education.
- Submission or rejection of such conduct is used as a basis for employment or academic decisions.
- Such conduct substantially interferes with a student's employment or education, or creates a hostile, offensive employment or educational environment.

Basically, sexual harassment is when someone makes you think you'll get in trouble, lose your job, get a bad grade, or be denied a service unless you give in to sexual advances or put up with sexual remarks or actions.

### What Can I Do About Sexual Harassment?

First, if you can, be sure that the harasser knows you do not welcome this conduct or communication. Try to state your objections clearly when it first begins. Don't just hope the problem will go away. Keep notes on when and how your problem occurred and save any available evidence which may be able to support your allegation. This information will assist the College in handling your complaint.

Incidences of sexual harassment should be reported to the **Equity Officer, who is located in J101 (telephone: 989-686-9512; email: [equityoffice@delta.edu](mailto:equityoffice@delta.edu))** or to the Vice President of Student and Educational Services in B137, or to the appropriate Division Chairperson. The Department of Public Safety can assist if the above named offices are closed.

### For More Information

If you're unsure you have a valid sexual harassment complaint, you should speak with the Equity Officer at the location listed above. The Equity Officer will listen to the facts regarding your situation and will explain the process that is used to handle these concerns. In compliance with the law, all claims of sexual harassment must be investigated. Complaints can be handled through an informal process and are resolved as quickly as possible. Website information: [www.delta.edu, AtoZ index, Equity Office](http://www.delta.edu, AtoZ index, Equity Office).

## Parking Regulations

All individuals using a motor vehicle on Delta College property are expected to comply with College and/or State rules, regulations, and laws pertaining to parking, traffic, and vehicle use on College property. Violations of College parking rules and regulations will result in a parking ticket which will result in fines and penalties ranging from \$10 to having the vehicle towed away at the owner's expense. Operators in violation of State law provisions applicable to the Campus will be issued a traffic citation complaint, which will require the violator to appear in 74th District Court in Bay City. Delta College parking and traffic regulations can be found at [www.delta.edu, AtoZ index, Public Safety](http://www.delta.edu, AtoZ index, Public Safety)

## Drug & Alcohol Guidelines and Resources

Information is provided in compliance with the Drug Free School and Communities Act Amendments of 1989 Public Law 101-226 at [www.delta.edu, AtoZ index, Public Safety](http://www.delta.edu, AtoZ index, Public Safety).



## Students' Education Records: Accessibility & Confidentiality

The Family Educational Rights and Privacy Act (FERPA) of 1974 as amended, was written to protect the privacy of educational records, to establish the right of students to inspect and review their educational records and provide guidelines for the correction of inaccurate or misleading data through informal or formal hearings. Persons requesting information and/or disclosure may be required to provide personal identification acceptable to the College official.

### I. Definitions

In accordance with FERPA the following definitions are applicable to Delta College:

**student** - any person who attends or has attended Delta College.

**education records** - any record (in handwriting, print, tapes, film, computer or other medium) maintained by the College or an agent of the College which is related to a student, except:

1. A personal record kept by a staff member if it is kept in the sole possession of the maker of the record and is not accessible or revealed to any other person except a temporary substitute for the maker of the record.
2. An employment record of an individual whose employment is not contingent on the fact that he or she is a student, provided the record is used only in relation to the individual's employment.
3. Records maintained by the Department of Public Safety Office if the record is maintained solely for law enforcement purposes, is revealed only to law enforcement agencies of same jurisdiction.
4. Records maintained by the Department of Public Safety Office and Health Programs Offices if the records are used only for treatment of a student and made available only to those persons providing the treatment.

### II. Annual Notification

Delta College will notify students of their FERPA rights via publication in the College's catalog and the student Bulletin.

### III. Procedure to Inspect Education Records

As per FERPA, students have the right to inspect, review and copy their educational records excepting those instances listed in IV & V below. Students wishing to review their educational records may be required to make a written request to the appropriate record custodian identifying as precisely as possible the record or records he or she wishes to inspect. The College reserves the right to charge a student for all copy costs.

The record custodian or an appropriate College staff person will make the needed arrangements for access as promptly as possible and notify the student of the time and place where the records may be inspected. Access will be given within 15 days or less from the receipt of the request.

When a record contains information about more than one student, the student may inspect and review only that portion of the record which relates to him/her.

### IV. Right of the College to Refuse Access

Delta College reserves the right to refuse a student to inspect, review, and copy the following records:

1. Financial and personal information submitted by their parents for financial aid purposes.
2. Confidential letters and recommendations associated with admissions, employment, job placement or honors to which they have waived their rights of inspection and review.
3. Letters and statements of recommendation which were placed in the students file before January 1, 1975.
4. Those records which are excluded from FERPA definition of education records (see section I).

### V. Refusal to Provide Copies

Per FERPA, Delta College reserves the right to deny transcripts or copies of records for any of the following situations:

1. The student has an unpaid financial obligation to the College.
2. There is an unresolved disciplinary action against the student.

### VI. Types, Locations and Custodians of Education Records

TYPES	LOCATION	CUSTODIAN
Academic Records	Registrar's Office - B100	Registrar
Admission & Advising Records	Counseling Office - D102	Director of Counseling
Class Records	Academic Offices	Faculty/Deans
Disciplinary Records	V.P. Student & Educational Services - B137	V.P. of Student & Educational Services
Placement Records	Career & Employment Services East Courtyard D102	Director of Career & Employment Services
Financial Records	Controller's Office - B118	Controller
Financial Aid Records	Financial Aid Office - D101	Director of Financial Aid
Health Records	Department of Public Safety - N102	Captain of Public Safety & Health Discipline Coordinators
International Students	Admissions Office - D101	Associate Director of Admissions
Law Enforcement Records	Department of Public Safety - N102	Captain of Public Safety
State & Federal Grants	Varies	Designated Dir./Coord. of Grant Act



## VII. Disclosure of Education Records

Delta College will only disclose non-directory information (see section IX) from a student's education records with the written consent of the student; however, students written consent is not required for the following:

1. Delta College officials who have a legitimate educational interest in the student's educational records.
  - ▷ A Delta College official is:
    - A person employed by the College in an administrative, supervisory, academic, research, or support staff position.
    - A person elected to the Board of Trustees.
    - A person employed by or under contract to the College to perform a special task, such as an attorney or auditor.
  - ▷ A Delta College official has legitimate educational interest if the official is:
    - Performing a task that is specified in his or her position description or by a contract agreement.
    - Performing a task related to a student's education.
    - Performing a task related to the discipline of a student.
2. Providing a service or benefit relating to the student or student's family, such as health care, counseling, academic advisement, job placement or financial aid.
3. To officials of another school, upon request, in which a student seeks or intends to enroll (student must be notified).
4. To certain officials of the U.S. Department of Education, the Comptroller General and state and local educational authorities, in connection with certain state or federally supported education programs.
5. In connection with a student's request for or receipt of financial aid, as necessary to determine eligibility, amount or conditions of the financial aid, or to enforce the terms and conditions of the aid.
6. If required by a state law requiring disclosure that was adopted before November 19, 1974.
7. To organizations conducting certain studies for or on behalf of the college.
8. To accrediting organizations to carry out their functions.
9. To parents of an eligible student who claim the student as a dependent for income tax purposes as defined in section 152 of the Internal Revenue Code.
10. To comply with a judicial order or a lawfully issued subpoena.
11. To appropriate parties in a health or safety emergency.
12. To military recruiter per the Solomon Amendment of 1997.

## VIII. Record of Requests for Disclosure

Delta College will maintain a record of all requests for and/or disclosure of information from a student's education records, except requests for directory information requests from qualified faculty/staff of Delta College or disclosure to a student of his or her records pursuant to a written request. The record will indicate the name of the party making the request, any additional party to whom it may be re-disclosed, and the legitimate interest the party had in requesting or obtaining the information. The record may be reviewed by the parents of dependent students or the eligible student.

## IX. Directory Information

At its discretion the College may provide Directory Information in accordance with the provisions of FERPA. Delta College designates the following items as Directory Information:

- student name, verification only of address, whether or not currently enrolled, dates of attendance, degrees/certificates and awards conferred (including dates), program, participation in officially recognized activities and sports and weight and height of members of athletic teams.

The College may disclose any of these items without prior written consent, unless notified in writing to the contrary by the student. Requests to withhold Directory Information must be filed with the Registrar.

## X. Correction of Education Records

Students who believe that their educational records contain information that is inaccurate or misleading or is otherwise in violation of their privacy or other right, may discuss their problems informally with the persons in charge of the records involved. If these persons agree with the student, the appropriate records will be amended. If not, students will be notified within a reasonable period of time that the records will not be amended and will be informed of their right to a formal hearing. If the record is not amended by the College following such a hearing, the student has the right to place a statement in the record commenting upon the record and any reasons for disagreement.

## XI. Complaints

A person may file a written complaint with the Department of Education regarding an alleged violation under FERPA. The address is: Family Policy Compliance Office, U.S. Department of Education, Washington, DC 20202-4605.

- A timely complaint is defined by the Dept. of Education as an allegation of a violation of the Act that is submitted to the Family Compliance Office within 180 days of the date of the alleged violation or of the date that the complainant knew or reasonably should have known of the alleged violation.
- The Family Compliance Office will extend the time limit if the complainant shows that he or she was prevented by circumstances beyond the complainant's control from submitting the matter within the time limit, or for other reasons considered sufficient.

**NOTATION:** On January 7, 1993 the Department of Education issued final regulations amending the Family Educational Rights and Privacy Act (FERPA) to implement a disclosure provision of the Crime Awareness and Campus Security Act of 1990. Please contact Department of Public Safety for more information.

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## Full-Time Faculty and Administrative/Professional Staff

ADAMS, Shawntaye Assistant Professor of Math & Computer Science B.S.; M.S. Clark Atlanta University	BAKER, David Associate Professor of Chemistry B.S.; Ph.D University of Leicester M.S. University of Toledo-OH
ALEXANDER, Janet Assistant Professor of English B.A. Saginaw Valley State University M.A. Central Michigan University	BAKER, Wendy Associate Professor of Biology B.A. Gordon College M.A. Western Michigan University
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ALLEN, Michele Office Manager-LLIC; Coordinator-ATC A.B.S. Delta College	BALLOR, Cynthia Instructor of Sonography A.A.S. Ferris State University
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AMES, Amy Corporate Services - MI Works! Business Services Representative B.B.A. Baker College	BARBIER, Stuart Professor of English B.A. Albion College M.A.; Ph.D Michigan State University
ANDERSON, Jennifer Human Resources - Generalist A.B.S. Delta College B.B.A. Northwood University	BASKIND, David Associate Professor of Psychology B.A. Miami University - OH M.A.; Ph.D Bowling Green State University - OH
ANDRES, Edward Facilities Planning Assistant A.A.S. Delta College	BECKMAN, Eric Assistant Professor of Economics B.S.; M.A. Central Michigan University
APPOLD, Melissa Assistant Professor of Dental Assisting B.A. Spring Arbor University C.T. Delta College	BECKSTROM, Garry Astronomer and Planetarium Manager B.S. University of Iowa
ARNOLD, Ann Academic Advisor A.A. Delta College	BENNETT, Thomas Director of Learning Technology B.S. Grand Valley State University M.A. Saginaw Valley State University
AUGUST, Daniel Corporate Services - Aftermarket Specialist A.G.S. Macomb Community College	BERNTHAL, Sharon Assistant Professor of English B.S.; M.A. Eastern Michigan University
AULT, Robert Assistant Professor of Welding	BETANCOURT, Tomas Coordinator of Audio/Visual Services
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AVILA, Maria Corporate Services - Career Manager	BLECKE, Nathan Associate Professor of Math & Computer Science B.A. Western Michigan University M.A. Central Michigan University
AYALA, Eva Corporate Services - Employment Services Advisor A.B.S. Delta College	BLEDSON, David Associate Professor of Residential Construction B.S. Central Michigan University M.E. Saginaw Valley State University
BAILEY, David Associate Professor/Science Division Chair B.A. Hiram College-OH Ph.D Case Western Reserve University-OH	BOLDT, Kimberly Assistant Professor of Sonography A.A.S. Loma Linda University B.S. Siena Heights College
BAILEY, John Corporate Services - MI Works! Business Services Representative B.S. Central Michigan University	BOUDROT, Thomas Assistant Professor of Political Science B.S.; M.A. Ball State
BAIYASI, Stephanie Assistant Professor of Biology A.A.S. Delta College B.S.; D.V.M. Michigan State University	BOURASSA, Lindsey Lifelong Learning Program Development & Marketing Manager A.A. Delta College
BAKER, Barry Executive Director Communication Technology B.A. Wayne State University	

BRADY, John Counselor A.A. Kellogg Community College B.A.; M.S.W. University of Michigan-Dearborn	CLEGG, Antoinette Assistant Professor of Accounting B.A. Western Michigan University M.A. Nova Southeastern University
BRASSEUR, Gary Director of Enrollment Services B.A.; M.A. Saginaw Valley State University	CLEMENT, Emily Director of Strategic Partnership A.A.S. North Central Michigan College B.A.S. Davenport University M.A. Spring Arbor University
BRIESCHKE, Keith Instructor of A.S.E.P. / AUT Program A.A. Ferris State University	COATS, Thomas Instructor of Automotive Service Technology A.A.S. Delta College
BRITTO, Neville Professor of English A.B.S. University of Nagpur-India A.B.S. University of Rome-Italy M.A. University of Michigan - Ann Arbor	COLENBRANDER, Andrew Associate Professor of English A.A. Citrus College - CA B.A.; M.A. University of Montana M.A. Central Michigan University
BRONSTETTER, Michele Team Supervisor A.B.S.; A.G.S. Delta College	COLLINS, Lynette Corporate Services - MI Works! Supervisor A.A.S. Great Lakes College B.A. Spring Arbor University
BRUCHHOF, Bryan Corporate Services - MI Works! Business Services Representative B.S. Mankato State College	COLVIN, Richard Building Systems Control Technician
BUBLITZ, Kevin Grounds Maintenance Supervisor	CONE, Bret Instructor of Radiological Technology B.S. Midwestern State University-TX M.B.A. Wayland Baptist University-TX
BURGER, Grace Corporate Services - Manager of Bay JET Program B.S. Michigan Technological University	COOPER, Michael Director of Disability Services B.S.; M.A. Central Michigan University
BURNS, Wendy Associate Professor of Biology B.S. Alabama A&M University Ph.D Western Michigan University	COOPER, Steven Academic Advisor B.S. Central Michigan University
BUSHONG, Thelma Director, Center for Organizational Success B.B.A.; M.B.A. Saginaw Valley State University	CORNEJO, Osiris Assistant Professor of English B.A. Chatham College M.A.; Ph.D Michigan State University
BUTCHER, Larry Professor of Art B.S.; M.A. Central Michigan University	CORNELIUS, Casey Associate Dean for Student Engagement B.A.; M.A. University of Toledo
CARLSON, Peter Professor of Math & Computer Science B.S. Michigan Technological University M.A. Central Michigan University	CORNELL, Paula Professor/Nursing Coordinator of Nursing A.A.S. Delta College B.S.N.; M.S.N. Saginaw Valley State University
CARTER, Marcie Director, Bridge Program B.S.W. Saginaw Valley State University	CRAMER, Angela Senior Accounting Manager A.B.S. Delta College B.B.A. Northwood University
CAYLOR, Thomas Director of Communication, Corporate/Foundation Relations B.A. Central Michigan University	CRAWFORD, Randal Professor of Graphic Arts B.A. Philadelphia College of Art M.A. Cranbrook Academy of Art
CHANDRAN, Sheilanthi Specialist-Student Development B.A.; M.A. Foreign Colleges	CROWELL, Jack Professor of Math & Computer Science B.S.; M.S. Michigan State University M.S. University of Illinois
CHILDS, Wendy Manager of HRIS and Compensation A.A.; C.T. Delta College B.B.A. Northwood University	CUNNINGHAM, Tara Fitness & Recreation Center Manager B.A. Saginaw Valley State University
CLAREY, Timothy Professor of Geology A.G.S. Delta College B.S.; Ph.D Western Michigan University M.S. University of Wyoming	CURTIS, Christopher Associate Professor of Psychology B.S.; M.A. Central Michigan University
CLARK, Pamela Executive Director of Institutional Advancement A.A. Delta College B.A. University of Michigan - Ann Arbor M.A. Saginaw Valley State University	CUVELIER, Michelle Corporate Services - Employment Services Advisor B.S. University of Iowa

DAVIS, Chey Instructor of English B.A. Michigan State University M.A. Central Michigan University	DULL, Laura Associate Professor of History B.A. Central Michigan University M.A.; Ph.D University of Notre Dame M.T.S. Weston Jesuit School of Theology
DAVIS, Nadine Professor of English B.A. Michigan State University M.A. Saginaw Valley State University	DUNCAN, Jennifer Instructor of Nursing A.A.S.; B.S.N. University of Nebraska-Omaha
DAVIS, Russell Corporate Services - Business Solutions Specialist B.S. Baker College M.S. Ferris State University	DURUSSEL, William Learning Resource Manager A.G.S. Delta College
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DEHNE, Kevin Associate Professor of Physics A.A.S. Oakland University B.A.; M.S. Eastern Michigan University	DZURKA, Cheryl Senior Human Resources Generalist A.G.S. Delta College
DELOSSANTOS, Michelle Head Athletic Trainer B.A. Carthage College M.S. Illinois State University	DZURKA, Robert Team Supervisor
DELUCA, Frank Corporate Services - Editor	ERICKSON, Glen Professor of Biology A.A.S. Delta College B.S. University of Michigan - Ann Arbor M.S. University of Idaho
DENNEY, Dana Assistant Professor of English B.A.; M.A. Michigan State University	ERNST, David Production Coordinator B.I.S. Central Michigan University
DEROCHE, Brad Assistant Professor of Music B.A. Central Michigan University D.M.A. Eastman School of Music M.A. Eastern Michigan University	EVERHARDT, Sharon Instructor of Sociology A.A. Owens Community College B.A.; M.A. University of Toledo-OH
DEWEY, Elizabeth Specialist - Student Development B.A. Lake Superior State University M.A. Central Michigan University	EWING, Mark Librarian-Reference B.A.; M.L.S. Wayne State University
DIGREGORIO, Jacinthe Corporate Services - French Translation Specilaist B.A. University of Central Florida M.A. Saginaw Valley State University	EYRE, Matthew Assistant Professor of Mechanical Technology & Design B.S.; M.S. Michigan Technological University M.B.A. Saginaw Valley State University
DOMINIQUE, Gina Associate Professor of Art B.A. Corcoran School of Art M.A. University of New Mexico	FACCIO, Bruce Assistant Professor of Welding A.A.S.; B.S. Ferris State University M.Ed. Saginaw Valley State University
DOUGLASS, Yolanda Academic Advisor A.A. Delta College B.S.W. Saginaw Valley State University	FAIRCHILD, Dawn Assistant Professor of Management A.A. Alpena Community College B.B.A. Michigan Technological University M.A. Spring Arbor University Ph.D Capella University
DOYLE, Jeanne Accountant A.A.S. Delta College	FALESKI, Michael Assistant Professor of Physics B.S. Rochester Institute of Technology-NY M.S.; Ph.D Syracuse University
DRAKE, Cynthia Assistant Professor of Biology B.S. Florida Institute of Technology M.S. Ohio University	FINELLI, Michael Assistant Professor of Residential Construction A.A.S. Delta College B.S. Ferris State University
DROUSE, Cynthia Associate Professor of Computer Science & Information Technology A.A.S. Mott Community College B.S. Baker College M.S. Ferris State University	FINNEY, Martin Corporate Services - Employment Services Advisor A.A.S. Lansing Community College B.A.; B.S.; M.A. Saginaw Valley State University
DULEY, Jamie Associate Professor of Physical Therapy B.S.; M.S.P.T. Grand Valley State University	FOGARTY, Julia Professor of English A.A. Ferris State University B.A.; M.A. University of Oregon Ph.D Michigan State University

FORSBERG, Ralph  
Professor of Philosophy  
B.S. Bradley University  
M.A. Roosevelt University - IL  
Ph.D Loyola University - IL

FULMER, Marshall  
Producer Director  
A.A. Delta College  
B.S. Ferris State University

GAGNON, Lori  
Professor of Nursing  
B.S. Saginaw Valley State University  
M.S. University of Michigan - Ann Arbor

GARLICK, Michael  
Manager - Chemistry Laboratory  
B.S. Central Michigan University

GARNETT, Thomas  
Manager of Technical Services/Chief Engineer  
A.A.; B.S. Ferris State University

GILBERT, Clarence  
Corporate Services - MI Works! Manager  
A.A.S. Community College of the Air Force

GIULIANI, Donna  
Assistant Professor of Sociology  
A.A. Mid Michigan Community College  
B.S.; M.A. Central Michigan University

GLADY-TESCHENDORF, Bethleen  
Instructor of English  
B.A. University of Michigan - Flint  
M.A. Central Michigan University

GLEASON, James  
Assistant Professor of Electronic Media  
B.S. Northern Michigan University  
M.A. Saginaw Valley State University

GLOWACKI, Michael  
Instructor of Graphic Arts  
B.F.A. Kendall College of Art and Design  
M.F.A. Cranbrook Academy of Art

GOETZINGER-PENA, Diane  
Associate Professor of Office Administration & Technology  
B.S. Central Michigan University  
M.S. Texas A&I University

GONZALEZ, Judyth  
Professor of Speech  
B.A. Oral Roberts University - OK  
M.A. Southern Nazarene University

GOOD, Bonnie  
Assistant Professor of Child Development  
A.A. Delta College  
B.A. Saginaw Valley State University  
M.S.W. Michigan State University

GOODNOW, Jean  
President  
B.A.; M.A.; Ph.D University of Iowa

GOODROW, Ryan  
Financial Aid Advisor  
A.B.S. Delta College

GOODSON, Martin  
Professor of Physics  
B.S. Stillman College  
Ed.D. Indiana University  
M.S. Indiana State University

GOUDAS, Alexandros  
Instructor of English  
B.S.; M.A. Minnesota State University

GOULD, Terri  
SES Division Technology Specialist  
A.B.S. Delta College  
B.B.A. Northwood University

GOVITZ, Leanne  
Director of Marketing & Public Information  
B.A. Michigan State University

GRAVES, Patricia  
Director of Business Partnerships, Legislative Relations & Resource Development  
B.S.; M.A. Central Michigan University  
Ph.D Michigan State University

GREGORY, Earl  
Assistant Professor of Respiratory Care  
B.S. Saginaw Valley State University  
M.S. Purdue University

GRETHER, Cynthia  
Food Service Manager  
B.B.A. Northwood University

GREVE, Christine  
Corporate Services - Regional Director MI SBTDC  
A.A. Delta College  
B.B.A. Saginaw Valley State University  
M.B.A. Central Michigan University

GROULX, Sonya  
Corporate Services - Career Manager Supervisor  
B.A. Michigan State University

GRUNOW, Tamie  
Director of Human Resources  
A.G.S. Delta College  
B.A.; M.E. Saginaw Valley State University

GUTIERREZ, Diana  
Director of Counseling, Advising, Career Services  
A.A. Delta College  
B.A. Saginaw Valley State University  
M.A. Central Michigan University

GUTIERREZ, Raymond  
Multicultural Services Advisor  
A.A. Delta College  
B.A. Western Michigan University  
M.S.W. University of Michigan - Ann Arbor

HACKBORN, Tari  
Associate Professor of Computer Aided Design  
A.A.S. Delta College  
B.S.; M.A. Central Michigan University

HALOG, Donald  
Vice President of Instruction/Learning Services  
B.S. University of San Francisco  
M.A. University of Illinois

HAM, James  
Professor of Math & Computer Science  
B.A. Kalamazoo College  
M.A. Ohio State University

HAMMERBACHER, Cynthia  
Corporate Services - Job Search Instructor  
B.A. Spring Arbor University

HANDLEY-MILLER, Barbara  
Associate Professor of Speech  
B.A. Michigan State University  
M.A. Central Michigan University

HARDING, Mary  
Director of Development  
A.B.S. Delta College  
B.A. Northwood University

---

HARKNESS, Bernadette  
Instructor of Chemistry  
B.S. University of British Columbia  
Ph.D McGill University

HARRISON, Jill  
Assistant Professor of Child Development  
B.A. Central Michigan University  
M.S. East Carolina University - NC

HARVEY, Susan  
Associate Professor of Psychology  
B.A. Mercyhurst College  
M.S. North Dakota State University

HASKE, Toby  
Assistant Professor of Dental Hygiene  
A.A.S. Kalamazoo Valley Community College  
B.S. Western Michigan University  
M.A. Central Michigan University

HASKIN, Debra  
Pledge Producer  
A.G.S. Delta College

HAYNES, Margaret  
Associate Professor of English  
B.A. Mount Holyoke College  
M.A. Southern Illinois University  
M.A.T. John Hopkins University  
Ph.D Michigan State University

HEINZ, Timothy  
Associate Professor of Respiratory Care  
B.S. Saginaw Valley State University  
M.A. Central Michigan University

HELGREN, Heidi  
Assistant Professor of Management  
B.A. Saginaw Valley State University  
J.D. Wayne State University

HEMINGWAY, Kelly  
Instructor of Nursing  
B.S.N. University of Michigan - Ann Arbor  
M.S.N. Walden University MN

HERNANDEZ-ALANIZ, Monica  
Academic Advisor  
A.G.S. Delta College  
B.A. Spring Arbor University

HEYART, Beth  
Assistant Professor of Speech  
B.S. Oakland University  
M.A. Ball State University

HILL, Alan  
Associate Professor of Sociology  
B.A. Furman University  
M.Phil.; M.A. Columbia University

HILL, Denise  
Assistant Professor of English  
B.S. Central Michigan University  
M.A. Michigan State University

HOCK, Matthew  
TV Operations Producer  
B.S. Grand Valley State University

HOFFMAN, Floyd  
Assistant Director of Business Services  
A.A.S. Delta College  
B.A. Michigan State University

HOFFMAN-JOHNSON, Gail  
Professor/Business & Information Technology Division Chair  
B.A. University of Michigan - Flint  
M.S. Northern Michigan University  
Ph.D Michigan State University

HOLOMAN, Linda  
Director of Student Diversity and Inclusion  
B.A. Norfolk State University - VA  
M.A. Central Michigan University

HOLTMAN, Loretta  
Assistant Professor of Biology  
B.S. Central Michigan University  
M.D. University of Michigan - Ann Arbor

HOLTMAN, Russell  
Fire Science Coordinator/Apprenticeship Operations Manager  
A.A.S. Mott Community College

HOPPE, Renee  
Assistant Professor of Lifelong Wellness  
A.A.S. Delta College  
B.S.; M.A. Central Michigan University

HORN, Christine  
Assistant Professor of Nursing  
B.S. Saginaw Valley State University  
M.S.N. University of Phoenix

HOWARD, Joyce  
Associate Professor of Biology  
B.S. Central Michigan University  
M.A.T. St Johns Provincial Seminary  
M.S. Eastern Michigan University

HOWELL, Adna  
Assistant Professor of Speech  
B.A.; M.A. Bob Jones University-SC

HOWERY, Khristopher  
Instructor of Computer Science & Information Technology  
A.A.S. Central Carolina Community College  
B.S. Strayer University  
M.S. Capitol College

HUBNER, Gregory  
Instructor of Accounting  
B.A. Michigan State University  
M.A. University of Phoenix

IAFANO, Gina  
Corporate Services - French Translation Specilaist  
B.A.; M.A. Wayne State University

IBANEZ, Monica  
Corporate Services - Employment Services Advisor  
A.A. Delta College  
B.S. Central Michigan University  
M.A. Saginaw Valley State University

ISACKSON, Ann  
Financial Aid Advisor  
B.A. Saginaw Valley State University

JAROSZ, Mitchell  
Professor of English  
B.A.; M.A. University of Detroit

JIMENEZ, Kara  
Associate Professor of Lifelong Wellness  
B.S.; M.A. Central Michigan University

JUMP, Jeffery  
Assistant Director of Facilities Management  
A.A.S.; B.S. Lake Superior State University

JUSTIN, Joel  
Instructor of Technical, Trades, & Manufacturing Division  
A.A. Delta College

KABAT, Jennean  
Librarian-Reference  
A.A. Delta College  
B.A. Saginaw Valley State University  
M.L.S. Wayne State University

---

KARLS, Elaine  
Professor of English  
B.A.; M.A. Michigan State University

KELLY, Terrance  
Associate Professor of Residential Construction  
A.A.S. Delta College  
B.S. Ferris State University  
M.A. Central Michigan University

KEMMER, Bruce  
Associate Professor of Management  
B.S. Central Michigan University  
M.A. Eastern Michigan University

KENDZIORSKI, Janis  
Associate Professor of Accounting  
A.A. Grand Rapids Community College  
B.A. Michigan State University  
M.B.A. Central Michigan University

KETCHUM, William  
Associate Professor of English  
B.A. Cornell University  
M.A. Michigan State University  
M.A. University of Wisconsin

KEYSER, Mary  
Employment Advisor  
A.B.S. Delta College

KHALIL, Anthony  
Project Manager - Staff Engineer/Architect  
B.A. Andrews University

KHEIL, Habib  
Professor of Math & Computer Science  
B.S.; M.S. Ohio University  
M.S. Bradley University

KILAR, Jeremy  
Professor of History  
B.A. University of Detroit  
M.A. Central Michigan University  
Ph.D. University of Michigan - Ann Arbor

KIME, Tammy  
Instructor of Nursing  
A.A.S. Delta College  
B.S.N. Saginaw Valley State University  
M.S.N. Duke University

KING, Kathleen  
Assistant Professor of English  
B.A.; M.A.T. Saginaw Valley State University

KLACZKIEWICZ, Terri  
Financial Aid Advisor  
A.A. Delta College  
B.A. Saginaw Valley State University

KLEIN, Kimberly  
Instructor of Political Science  
A.A. Delta College  
B.A. Oakland University  
M.A. Saginaw Valley State University

KLINGLER, Timothy  
Professor of Math & Computer Science  
B.A. Capitol University  
M.S. Oakland University  
M.S. Purdue University

KNOCH, Jane  
Coordinator of eLearning  
A.B.S. Delta College

KNOX, diedra  
Associate Professor of Biology  
B.S.; M.S. Southern University - LA

KOWECK, Daniel  
Corporate Services - Editor

KRAFT, Kevin  
Corporate Services - Editor

KRAYNAK, Wendy  
Manager of Recruitment & Employment  
A.A.S. Northeastern School of Commerce  
A.G.S. Delta College  
B.A.; M.A. Spring Arbor University

KUBATZKE, Trevor  
Vice President of Student Services  
B.S. University of Wisconsin  
M.S. Southwest Missouri State University

LACINA, Raymond  
Associate Professor of English  
B.A. Viterbo University  
M.A. Iowa State University  
Ph.D. University of Toronto

LARKOWSKI, Peter  
Instructor of Chemistry  
B.S. Ohio State University  
M.S. University of Michigan - Ann Arbor

LAWRASON, Lisa  
Assistant Professor of Political Science  
A.A.S. North Central Michigan College  
B.S. Murray State University - KY  
M.A. Central Michigan University

LEACH, Scott  
Instructor of Refrigeration, Heating & Air Conditioning  
A.A.; B.A.; M.S. Ferris State University

LEAMAN, Pauline  
Corporate Services - Career Manager

LEE, Eric  
Instructor of Technical, Trades, & Manufacturing Division  
B.S. University of Minnesota  
M.B.A. Wilfrid Laurier University  
M.S. University of Virginia  
Ph.D. University of Waterloo

LEGG, David  
Assistant Professor of Lifelong Wellness  
B.E.; Ed.D.; M.S. University of Toledo-OH

LEVY, Lawrence  
Professor of English  
B.A. Ohio Wesleyan University  
M.A. University of Wyoming

LEWIS, Joseph  
Instructor of English  
B.A. Hampton University - VA  
M.A. New York University

LIGHT, Timothy  
Telecommunication Service Specialist  
A.A.S. Delta College

LIJEWSKI, Jason  
Instructor of Management  
B.S. Ferris State University  
M.B.A. Central Michigan University

LOOBY, Mary  
Professor of English  
B.A. Nazareth College  
M.A. Saginaw Valley State University

LORD, Charles  
Admissions Representative/Athletic Recruiter  
A.A. Northwestern Michigan College  
B.S.; M.A. Central Michigan University

LOREE, Patti  
Corporate Services - Job Search Instructor

LUCZAK, Gregory  
Corporate Services - Director of Business & Finance  
B.A. Alma College  
M.A. University of Michigan - Flint

LUTZ, Debra  
Vice President of Finance/Business  
A.A. Delta College  
B.A. Michigan State University  
M.A. Central Michigan University

LUTZ, Phoebe  
Professor/Math & Computer Science Division Chair  
B.S. Alma College  
M.S. Michigan State University

MAJCHRZAK, Jonathan  
Instructor of Lifelong Wellness  
B.A. Saginaw Valley State University  
M.A. Northern Michigan University

MALKOWSKI, Keith  
Assistant Director of Enrollment  
B.A. Northern Michigan University  
M.A. Marquette University - WI

MALLAK, Jeanne  
Associate Professor of CO-OP Education  
A.A.S. Northwood University  
B.S.; M.S. Central Michigan University

MALLEK, Gregory  
Athletic Director  
B.A.; M.E. Saginaw Valley State University

MANIGAULT, Katrina  
Instructor of Computer Science & Information Technology  
A.B.S. Wayne County Community College  
B.B.A. Davenport University  
M.S. Lawrence Technological University

MANNINEN, Maria  
Associate Professor of Office Administration & Technology  
B.S. Eastern Michigan University  
M.S. Ferris State University

MASSOGLIA, Janet  
Assistant Professor of Nursing  
B.S.N. Lake Superior State University  
M.S.N. Saginaw Valley State University  
Ph.D. Oakland University

MAST, Amanda  
Corporate Services - Employment Services Advisor  
A.A. Alpena Community College

MAXIM, David  
Corporate Services - Job Search Instructor  
B.A. University of Michigan - Ann Arbor

MCALLISTER, Bernadette  
Instructor of Computer Science & Information Technology  
A.A. Oakland Community College  
B.A. Baker College  
B.S.; M.E. Wayne State University

MCGAW, Richard  
Associate Professor/Humanities Division Chair  
B.A. Albion College  
M.A. University of Michigan - Ann Arbor

MCGRATH, Peter  
Learning Resource Technician  
A.A.S. Delta College  
A.A.S. Ferris State University

MCKAY, Allan  
Corporate Services - Product Development Director  
B.S.; M.A. University of Waterloo

MCKINNEY-RONCIER, Lynn  
Corporate Services - French Translation Specilaist  
B.A. Eastern Michigan University  
M.A. Wayne State University

MCKINSTY, Amy  
Corporate Services - Employment Services Advisor  
B.S. Western Michigan University

MCQUISTON, Daisy  
Assistant Professor of Nursing  
A.A.S. Delta College  
B.S.N. Saginaw Valley State University  
M.S. Walden University

MEE, Robert  
Associate Professor of Foreign Languages  
B.S. Kansas State Teachers College  
M.A. University of Missouri

MENGER, Linda  
Professor of Art  
B.A. Michigan State University  
M.A. Central Michigan University

MERLING, Catherine  
MLL Coordinator  
B.S.N. Davenport University  
R.N. Grace Hospital School of Nursing

MILLER, James  
Instructor of Automotive Service Technology  
A.A.S. Delta College

MILLER, Jessica  
Counselor  
B.A.; M.A. Oakland University

MILLER, Judith  
Dean of Learning Support Services  
B.S.; M.A. Central Michigan University

MILLER, Lori  
Corporate Services - MI Works! Placement Advisor  
A.B.S. Delta College

MILLER, MaryJo  
Assistant Professor of Dental Hygiene  
B.S. Ferris State University  
M.A. University of Phoenix-AZ

MITCHELL, Mark  
Assistant Professor of Economics  
B.A.; M.A.; Ph.D. University of Notre Dame

MITCHELL, William  
Planetarium Show Specialist  
A.A. Delta College  
B.S. Central Michigan University

MOFFETT, Maggie  
Coordinator - Laboratory  
A.A.S. Mid Michigan Community College  
B.S. Central Michigan University

MONTESI, Susan  
Dean of Learning Centers and Innovative Programs  
B.S. Ferris State University  
M.A.; M.S. Central Michigan University

MOOK, David  
Corporate Services - Employment Services Advisor  
B.S. Michigan State University

MOORE, Marcia  
Associate Professor of Speech  
B.A. University of Toledo-OH  
M.A. Regent University  
Ph.D. Bowling Green State University-OH

<p>MOORE, Robert Assistant Professor of Political Science B.S. Ohio University M.A. University of Toledo-OH M.A. Ashland Theological M.A.; Ph.D Michigan State University</p> <p>MORLEY, Cynthia Corporate Services - Product Delivery Director B.S. Central Michigan University M.B.A. Michigan State University</p> <p>MORSE, Terry Assistant Professor of Technical, Trades, &amp; Manufacturing Division B.S. Ferris State University M.E. Saginaw Valley State University</p> <p>MOSQUEDA, Margarita Dean of Student Services/Equity Officer B.A.; M.A. Western Michigan University</p> <p>MOWLAVI, Masood Associate Professor of Biology B.S. Tehran University M.A. Wayne State University M.S.; Ph.D Michigan State University</p> <p>MURPHY, Carla Associate Professor of Lifelong Wellness B.S. Alma College M.S. Pennsylvania State University</p> <p>NICHOLS, Jennifer Corporate Services - Employment Services Advisor B.A. Saginaw Valley State University</p> <p>NICHOLS, Katrina Professor of Math &amp; Computer Science A.A. Delta College B.A. University of Michigan - Ann Arbor M.A. Saginaw Valley State University</p> <p>NICHOLS, Randall Associate Professor of Math &amp; Computer Science B.S.; M.A.T. Indiana State University</p> <p>NIESTER-MIKA, Jennifer Instructor of English B.S. Michigan State University M.A. Central Michigan University</p> <p>NITSCHKE, Ann Assistant Registrar &amp; Veterans Services B.S. Central Michigan University</p> <p>NOWICKI, Susan Coordinator - Business Services A.A. Delta College B.A. Saginaw Valley State University</p> <p>O'BOYLE, Jeanette Manager of Benefits A.B.S. Delta College B.B.A. Northwood University</p> <p>O'CONNOR, Trisha Associate Professor of English B.S.; M.A.E. Central Michigan University</p> <p>O'LAUGHLIN, Lisa Instructor of Office Administration &amp; Technology B.S.E.; M.A. Central Michigan University</p> <p>OLEARY, Terence Operations Manager A.A. Delta College B.A. Saginaw Valley State University</p> <p>OSANTOWSKI, Diane Director of Development A.B.S. Delta College</p>	<p>PASZTOR, Joseph Associate Professor of Geography B.A.; B.E. University of Saskatchewan M.E.; M.S.; Ph.D University of Oregon</p> <p>PECK, Cynthia Associate Professor of Chemistry B.A. Northern Michigan University M.S. Central Michigan University</p> <p>PECKHAM, Karen Corporate Services - Employment Services Advisor B.B.A. Northwood University</p> <p>PERUSKI, David Associate Professor/Health &amp; Wellness Division Chair B.S.N.; M.S.N. Saginaw Valley State University M.S.A. Central Michigan University</p> <p>PETEE, Linda Sustainability &amp; Risk Management Coordinator A.A.; A.B.S. Delta College B.A. Northwood University</p> <p>PETERS, Felicia Associate Professor of Computer Science &amp; Information Technology B.S. Morris Brown College - GA M.S. Southern Polytechnic State University</p> <p>PETERSEN, Ryan Assistant Professor of Political Science B.S. Willamette University M.A. Syracuse University</p> <p>PETRIMOUX, Linda Payroll Manager</p> <p>PFEIFFER, Raymond Professor of Philosophy B.A. Kenyon College M.A.; Ph.D Washington University</p> <p>PIECHOWIAK, Timothy Printing Production Coordinator A.A.S.; C.T. Delta College</p> <p>PLACKOWSKI, Linda Professor of Philosophy B.A.; M.A. Michigan State University</p> <p>POWERS, Barbara Bookstore Manager</p> <p>POZENEL, Christine Corporate Services - Career Manager A.A. Delta College B.A. Saginaw Valley State University</p> <p>PRENA, Kelli Instructor of Nursing A.A.A. Alpena Community College B.S.N. Lake Superior State University M.S.N. Grand Valley State University</p> <p>PRETZER, Judy Assistant Professor of Math &amp; Computer Science B.S. Saginaw Valley State University M.A. Central Michigan University</p> <p>PRIEBE, Lorraine Administrative Assistant A.A.; A.G.S. Delta College B.B.A. Northwood University</p> <p>PRZYBYLSKI, Robert Producer Director A.B.S. Delta College B.S. Ferris State University</p> <p>PRZYGOCKI, Virginia Interim Dean of Career Education and Learning Partnerships B.S. University of Michigan - Ann Arbor</p>
--	---

<p>RABIDOUX, Cynthia Administrative Assistant A.B.S. Delta College</p> <p>RAMET, Jean Academic Advisor A.A. Delta College B.A.; M.A. Saginaw Valley State University</p> <p>RAMM, Joan Professor of English B.A. Wayne State University M.A. Michigan State University</p> <p>RAMON, Tammy Instructor of Nursing A.A.S. Delta College B.S.N. Ferris State University</p> <p>RAMSEYER, Larry Director of Facilities Management A.A. Delta College B.S.; M.A. University of Michigan - Ann Arbor</p> <p>RANDALL, Pat Specialist:Database Analyst B.A. Baker College</p> <p>RANDOLPH, Karen Associate Professor of English B.A.; M.A. Western Michigan University</p> <p>REDMAN, David Professor of Math &amp; Computer Science B.S. University of California, Irvine M.S. University of Minnesota</p> <p>REED, Jennifer Coordinator - Possible Dream &amp; Youth Development B.S.; M.A. Central Michigan University</p> <p>REEVES, Rosemary Coordinator -Substance Abuse Prevention &amp; Education Program A.A. Delta College</p> <p>REID, Fay Student Finance Manager B.S. Central Michigan University</p> <p>RENNA, Pamela Associate Professor of Foreign Languages B.A. University of Oregon M.A. University of Illinois Ph.D Brown University</p> <p>RESZKE, Cindy Instructor of Radiological Technology A.A.S.; B.S. Ferris State University M.A. Central Michigan University</p> <p>REYES, Cynthia Admissions Advisor A.A. Delta College</p> <p>RICHA, Camille Corporate Services - Service Instructor A.A.S. Brookdale Community College-NJ B.S. Pennsylvania College of Technology</p> <p>RIGGS, Kristin Academic Advisor B.A. Saginaw Valley State University</p> <p>RIVET, Natascha Associate Professor of Math &amp; Computer Science A.A.S. Delta College B.A. Western Michigan University M.A. Central Michigan University</p> <p>ROBERSON, Mary Assistant Professor of Math &amp; Computer Science B.S.; M.S. University of Wyoming M.S. Eastern Michigan University</p>	<p>ROBERTSON, Mark Professor of Biology B.A. University of Virginia M.S. Virginia Polytechnic Institute</p> <p>ROEBUCK, Dennis Instructor of Computer Science &amp; Information Technology B.A. Saginaw Valley State University M.A. Central Michigan University</p> <p>ROMER, Scanlon Professor of Economics B.A. University of Minnesota M.S. University of Utah</p> <p>ROSEBERRY, Carolyn Instructor of Office Administration &amp; Technology B.A. University of Michigan - Ann Arbor</p> <p>ROSIN, Steven Associate Professor/Technical, Trades, &amp; Manufacturing Division Chair A.A.S. Community College of the Air Force B.A. Eastern Illinois University M.A. Central Michigan University</p> <p>ROZNOWSKI, James Professor of Math &amp; Computer Science B.S.; M.A. Central Michigan University</p> <p>RUMMEL, Randall Specialist - Student Development A.A.S. Delta College A.B.S. University of Michigan - Ann Arbor</p> <p>RUSHDAN, Haneef Corporate Services - Employment Services Advisor A.A. Delta College B.S. Northern Michigan University</p> <p>RUSSELL, Gerald Corporate Services - Employment Services Advisor</p> <p>RUTH, Carl Assistant Director of Counseling Advising, Career Services B.S. Western Michigan University M.A. Central Michigan University</p> <p>SABLO-YATES, Maria Assistant Professor of Foreign Languages B.A.; M.A. University of Washington</p> <p>SABOURIN, Joan Professor of Chemistry B.S. Aquinas College M.S. Purdue University</p> <p>SANDERS, Leslie General Counsel &amp; Director of Planning B.A. Scripps College J.D.; M.A. Wayne State University</p> <p>SCHAAB, Nancy Associate Professor of Psychology B.S. University of Pittsburgh M.A.; Ph.D Ohio State University</p> <p>SCHAFER, Spring Instructor of Psychology B.S.; M.S. Central Michigan University</p> <p>SCHAUB, James Criminal Justice Training Coordinator A.A.S. Delta College</p> <p>SCHUENEMAN, Bill Assistant Professor of Computer Science &amp; Information Technology B.A. Michigan State University C.T. Delta College M.S. Ferris State University</p>
---	---

SCHUITMAN, Heidi Assistant Professor of Speech A.A. Delta College B.A. Michigan State University M.A. Central Michigan University	SMITH, Sol Instructor of English B.A. San Diego State University E.D...D. Walden University M.A. Goddard College
SCHULTZ, Brian Corporate Services - Resource Coordinator/Welding Training A.A.S. Delta College	SOMERS, Michael Instructor of English B.A. Albion College M.A. Northern Michigan University
SCHULTZ, Maureen Laboratory Manager B.S. Saginaw Valley State University M.S. Miami University - OH	SORRELS, Jeffrey Instructor of Speech B.A.; M.A. Stephen F Austin State University-TX
SCHULTZ, Scott Professor of Physics B.A. Canisius College M.S. North Carolina State University	SOUTHWELL, Donald Assistant Professor of Computer Science & Information Technology B.S.; M.S. Central Michigan University Ph.D Eastern Michigan University
SCORSONE, Diane Assistant Director of Financial Aid B.A.; M.A. University of Michigan - Ann Arbor	SPITZ, Mike Professor of Physical Therapy A.A.S. Delta College B.S.; M.S.A. Central Michigan University
SEEBURGER, Scott Business & Community Relations Coordinator A.A. Delta College B.A.A. Central Michigan University	SPREEMAN, Jamie Corporate Services - Employment Services Advisor
SEGURA, Daniel Associate Director/International Advising Coordinator B.A. Saginaw Valley State University M.A. Central Michigan University	STARKEY, Crystal Instructor of English A.A. Delta College B.A. Siena Heights College M.A. Central Michigan University
SEIDEL, Paul Corporate Services - Executive Director A.A.S. Delta College B.S. Ferris State University M.A. Central Michigan University	STEVENSON, JodiAnn Assistant Professor of English B.A. University of Michigan - Ann Arbor M.A. New Mexico State University M.F.A. Goddard College
SHARP, Ronald Professor of Chemistry B.S.; M.S. Central Michigan University	STITT, Teresa Associate Dean of Community Development B.S.; M.S. Alabama State University
SHARPER, Howard Manager of Programming/Production-FM	SUDERMAN, Kristin Corporate Services - Employment Services Advisor B.A. Alma College
SHEPPARD, Tiffany Admissions Advisor A.A.; A.B.S. Delta College B.B.A. Northwood University	SULLIVAN, Matthew Facilities Planner A.A. Delta College B.S. University of Michigan - Ann Arbor
SIEH, April Associate Professor of Nursing B.S. Oakland University M.S. Wayne State University	SUTTER, Janet Planetarium and Learning Center Coordinator A.A. Delta College
SIKA, Elvina Financial Aid Advisor B.S. Michigan State University M.S.A. Central Michigan University	SWARTHOUT, Audra Assistant Professor of Biology B.S.; M.S. Eastern Michigan University
SMITH, Christine Academic Advisor B.A. University of Michigan - Ann Arbor	SYROPOULOS, Laurie Corporate Services - Dealer Communications Specialist B.S. Western Michigan University
SMITH, Galvann Coordinator - Police Academy B.A. Saginaw Valley State University	SZAFRANSKI, Wendy Instructor of Nursing B.S.N. Michigan State University M.S.N. Saginaw Valley State University
SMITH, Pamela Associate Professor of Dental Assisting B.S. Ferris State University M.A. Saginaw Valley State University	TAYLOR, Kathleen Assistant Professor of Dental Hygiene A.A.S. Mott Community College B.S.; M.S. University of Michigan - Flint
SMITH, Sarah Associate Professor of Sociology B.A.; M.A. University of Toledo-OH	TECHLIN, Andrea Web Content Marketing Manager B.A. Saginaw Valley State University
	TEMPERLY, Deborah Professor of Biology B.S.; M.S. University of Illinois

<p>TETER, Gregory Assistant Professor of Criminal Justice B.A. Mercy College of Detroit M.S. University of Detroit</p> <p>THEIS, Natalie Assistant Professor of Art B.F.A. Indiana University M.F.A. Central Michigan University</p> <p>THIBO, Sandra Aquatic Coordinator/Operations Assistant</p> <p>TRAVERSE, Donovan Instructor of Surgical Technology A.A.S. Delta College B.S. Michigan State University M.S. Central Michigan University</p> <p>TREADWAY, Karen Coordinator - Tutoring A.A. Delta College B.S.; M.A. Western Michigan University</p> <p>TRUSZKOWSKI, Patrick Instructor of Biology A.A. Macomb Community College B.S. Eastern Michigan University M.A. Wayne State University M.A.T. Marygrove College</p> <p>ULLRICH, Elizabeth Assistant Professor of Political Science B.A. California State University M.A. Pennsylvania State University</p> <p>URBANIAK, David Director of Financial Aid A.A. Delta College B.A. Western Michigan University M.A. Saginaw Valley State University</p> <p>URBANO, Charissa Professor of Biology/Director, Faculty Center for Teaching Excellence B.S. Bowling Green State University - OH Ed.D.; M.A. Ball State</p> <p>URSUY, Andrea Administrative Assistant to the President A.A.; A.B.S. Delta College B.B.A. Northwood University M.S. Eastern Michigan University</p> <p>VADER-MCCORMICK, Nancy Professor of Speech B.S. Western Michigan University M.A. Central Michigan University Ph.D. University of Florida</p> <p>VALKENBURG, James Director - Teaching Learning Center B.A.; M.A. William Paterson College</p> <p>VANDE ZANDE, Jeffrey Associate Professor of English B.S. Northern Michigan University M.A. Eastern Illinois University</p> <p>VANDERLAAN, Ski Assistant Professor of Accounting B.S. Regis College M.S. New Mexico State University</p> <p>VANHOUTEN, Jacob Associate Professor of Biology A.A.S. Alpena Community College B.S. Ferris State University M.S. Central Michigan University</p>	<p>WALKER, Jon Corporate Services - Business Development Director B.S. Missouri State University</p> <p>WALLAKER, Ann Corporate Services - Job Search Instructor A.A. Delta College</p> <p>WALLS, Morag Associate Professor of Criminal Justice B.A.; M.S. Michigan State University</p> <p>WASCHER, Linda Corporate Services - Training and Grants Coordinator A.B.S. Delta College</p> <p>WATSON, Connie Associate Professor of Psychology B.A. Western Michigan University M.S. Emporia State University - KS</p> <p>WAXMAN, Ellen Counselor B.A. Herbert H Lehman College M.A. Michigan State University</p> <p>WEBB, Barbara Director of Business Services A.A. Delta College B.A.; M.A. Central Michigan University</p> <p>WEEDMAN, Roslyn Professor/English Division Chair B.A.; M.A. University of Michigan - Ann Arbor</p> <p>WEISS, Timothy Assistant Professor of A.S.E.P. / AUT Program B.S.; M.A. Central Michigan University</p> <p>WELLS, Thomas Instructor of Math &amp; Computer Science B.A.; B.S. Drake University M.S. Montana State University</p> <p>WENZEL, Kristen Corporate Services - MI Works! Business Services Representative</p> <p>WESTBROOK, Beverly Associate Professor of Office Administration &amp; Technology B.A.; M.A. University of Iowa</p> <p>WHEELER, Melanie Counselor B.S.; M.A. Central Michigan University</p> <p>WHITAKER, E. Michele Associate Professor of Criminal Justice A.A. Delta College B.A. Saginaw Valley State University M.A. Central Michigan University</p> <p>WHITE, Michelle Manager of Cooperative Education and Experiential Learning A.B.S. Delta College</p> <p>WHITNEY, Shelly Controller B.A. Saginaw Valley State University M.B.A. Central Michigan University</p> <p>WIELAND, Debra Corporate Services - Business Consultant B.A.; M.B.A. Saginaw Valley State University</p> <p>WIESENAUER, Eric Instructor of Math &amp; Computer Science A.A.S. Delta College B.S.; M.A. Central Michigan University</p> <p>WILEY, Sarah Associate Professor of History B.A. University of Alabama M.A. University of Montana</p>
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WILLIAMS, David  
Associate Professor of Geography  
B.S. Central Michigan University  
M.A. Western Michigan University

WILLIAMS, Jennifer  
Professor/Social Science Division Chair  
B.S.; M.S. Eastern Michigan University

WILLMAN-ONSTOTT, Anna  
Corporate Services - Employment Services Advisor  
B.A. Alma College

WILSON, Karen  
Dean of Teaching & Learning  
A.A. Delta College  
B.A. Saginaw Valley State University  
M.A. Central Michigan University

WILSON, Ryan  
Instructor of English  
B.S. Ohio University  
M.A. Depaul University - IL

WILTSE, Michael  
Director-Law Enforcement & Training Center  
A.A.S. Delta College  
B.A. Ferris State University  
M.A. Saginaw Valley State University

WITZKE, Steven  
Public Safety Manager/Lieutenant  
A.A.; A.A.S. Delta College

WOIDERSKI, Larry  
Counselor  
B.S.; M.A. Central Michigan University

WOLF, Kirk  
Associate Professor of Philosophy  
A.B.S. Albright College  
M.A.; Ph.D. University of Kansas

WOOD, Jack  
LLIC Manager / Library Director  
A.A. Delta College  
M.L.S. Western Michigan University

WOOD, Michael  
Director of Institutional Research  
B.A. Tulane University  
M.Ap.St.; M.A. Louisiana State University

WOODEN, Anne  
Librarian - Government Documents & Reference  
B.S. Eastern Michigan University  
M.S. Wayne State University

WORTHING, Ralph  
Professor of Psychology  
B.S.; M.S. University of Wisconsin  
Ph.D. Iowa State University

WORTHINGTON, Timothy  
Corporate Services - MI Works! Business Services Representative  
A.A. Holy Cross Junior College - IN  
B.A. Curry College

WOTTA, Carol  
Financial Aid Advisor  
A.A. Delta College

WYMAN, Antoinette  
Instructor of Nursing  
A.A.S. Oakland Community College  
B.S.N. Eastern Michigan University  
M.S.N. Michigan State University

WYZKIEWICZ, Kevin  
Assistant Professor of Computer Science & Information Technology  
A.A.S. Delta College  
B.S.; M.A. Saginaw Valley State University

YEZAK, Joseph  
Television Program Manager  
B.S. Northern Michigan University

ZENZEN, Wanda  
Assistant Professor of Nursing  
A.A. Henry Ford Community College  
B.S.N.; M.S. University of Michigan - Ann Arbor  
Ph.D. Oakland University

ZIEMAN, Beth  
Associate Professor of Nursing  
A.A.S.; A.B.S. Delta College  
B.S.N. Regents School of Nursing  
M.S.N. Saginaw Valley State University

ZIOLKOWSKI, Lori  
Instructor of Management  
A.A. Delta College  
B.S. Michigan State University

ZUBE, Duff  
Registrar  
A.A. Delta College  
B.A. Saginaw Valley State University  
M.S. Central Michigan University



# Definitions of College Terms

Don't get lost in College jargon. Understand these terms, which generally are common to all colleges, and your academic life will be easier.

**Academic Year:** September through the following August. Includes the Fall Semester, Winter Semester, Spring Semester, and Summer Session.

**Academic Credits:** See Credits.

**Accredited:** Certified by a specific state, regional, or national organization as meeting standards of quality in instruction, staffing, facilities, finances, and policies.

**Add:** Changing your schedule by adding a course after your initial registration.

**Admission:** Being accepted by Delta so you can register for courses.

**Assessment:** Basic skills tests in English, reading, and math to assist you in selecting courses at the appropriate level. Generally, assessment is required for new students.

**Associate Degree:** Degree (diploma) granted after successful completion of a program of study which has a minimum of 62 credits.

**Audit:** Registering for and attending a course, but receiving no grade or credits. Regular tuition and fees must be paid. Audits do not count toward completion of a program or graduation.

**Caution:** A warning status due to low grades.



**Centers:** See maps, in this section.

**Certificate:** Document granted upon successful completion of a program of study which has less than 62 credits.

**Concurrent Course:** Often referred to as Corequisite. A course that must be taken during the same semester as another course is taken. Concurrent courses are listed at the beginning of the course description. See Section VI for Academic Course Descriptions.

**Contact Hours:** The total hours of lecture and laboratory instruction required for each course.

**Corequisite:** See Concurrent Course.

**Course:** A single subject, such as ENG 111, taken for one semester.

**Course Guide Booklet:** A Delta publication which lists all the courses being offered, and the registration schedule. The course guides are published for each semester and are available online.

**Credits:** Also referred to as Academic Credits, Credit Hours, and Semester Hours. Each course is assigned a number of credits which generally indicates the number of hours per week the class meets; i.e., a three credit course generally meets three hours each week. Courses with labs and occupational courses, however, generally meet more hours than the number of credits they carry. Tuition and fees are ordinarily charged by credit.

**Curriculum:** See Program of Study.

**Drop:** Changing your schedule by dropping a course after your initial registration.

**Dual Degree:** An Associate degree that is earned by completing two specified curricula concurrently. Approved curricula combinations are listed in Section III, Programs, Dual Degrees.

**Elective:** A course you may elect (choose) to take as opposed to a course you are required to take.

**Fees:** Special charges for courses or services other than tuition.

**Financial Aid:** Money received from various sources (grants, loans, scholarships, jobs) to help students with college costs. Most, but not all, forms of aid are based on financial need.

**Financial Aid Transcript:** A document you are required by federal regulations to have every other college you attended send to the Delta College Financial Aid Office, which lists any federal aid you may have received or states that you received no aid. Required of financial aid recipients before aid can be awarded.

**Freshman:** Academic student who has earned 29 or fewer credits.

**Full-Time Student:** Enrolled in 12 or more credits in a semester.

**G.E.D. (General Educational Development):** A high school equivalency certificate for adults who did not receive the traditional high school diploma. It is earned by passing the national G.E.D. exam, which may be taken through Delta Assessment/Testing Services Office.

**General Education:** A group of courses in the areas of social science, natural/physical science, communication, and humanities which provide a common and broadly-based body of knowledge.

**GPA (Grade Point Average):** The GPA is determined by dividing the grade points earned (see definition of grade points) by the number of credits attempted, excluding courses in which you received final grades of "P," "I," "X," "WI," "W," or "NC." The semester GPA includes grades in each semester; the cumulative GPA includes grades from all semesters at Delta.

**Grade Dispute:** The process available to you if you do not agree with the grade you received in a course. See Section IV, Academic Policies and Information, Disputed Final Grade Policy.

**Grade Ombudsman:** The staff member who will provide you with information and assistance in understanding and following the Grade Dispute process. For name of person, contact Senate Office at 686-9297.

**Grade Points:** Numerical values assigned to a letter grade for a course ("A" = 4 pts., "B" = 3 pts., "C" = 2 pts., "D" = 1 pt., "F" = 0 pts.), which are then multiplied by the number of credits assigned to the course; i.e., a "B" grade for a three credit course would have three grade points x three credits = 9 grade points.

**Graduation Requirements:** Specific steps you must successfully complete to qualify for a degree or certificate. See Section IV, Academic Policies & Information, Graduation Requirements for details.

**Grants:** Money provided for educational expenses which does not have to be repaid; also called "gift aid."

**In-District Student:** A legal resident of Bay, Midland, or Saginaw county as defined by the Delta College residency policy.

**Instructor-Initiated Drop:** Being dropped from your course by your instructor for either lack of attendance or lack of the required prerequisites.

**Loans:** Money you borrow from your bank or credit union for educational expenses which must be repaid after you leave school.

**MACRAO:** A transfer agreement between many Michigan two- and four-year colleges, which standardizes the basic general education requirements. See Section III, Programs for details.

**Ombudsman:** See Grade Ombudsman.

**Orientation:** A program you will participate in as a new Delta student, which will acquaint you with the College facilities, programs, services, and procedures and during which a counselor will assist you in reviewing your program and selecting your courses.

**Out-of-District Student:** A legal resident of Michigan, residing in a county other than Bay, Midland, or Saginaw.

**Out-of-State Student:** A legal resident of a state other than Michigan or of a foreign country.

**Part-Time Student:** Enrolled in less than 12 credits in a semester.

**Prerequisite:** Courses which must be successfully completed or requirements which must be met before enrolling in a specific course. Prerequisites are listed at the beginning of the course description. See Section VI for Academic Course Descriptions.

**Probation:** A warning status due to low grades or improper conduct.

**Program of Study:** A group of specific courses which you are required to complete successfully in order to qualify for a degree or certificate.

**Registration:** The time when you enroll in your courses and pay your tuition and fees. See Section II, Enrollment, Registration for details.

**Required Course:** A course in your program that you must take as opposed to one that you elect (choose) to take.



**Semester:** Generally 15 weeks in length. The three semesters in an academic year at Delta are Fall (late August through December), Winter (January through April), and Summer (May through August, 13 weeks).

**Semester Hours:** See Credits.

**Session:** Generally 7 or 7 1/2 weeks in length, which is half the length of a semester. The two primary sessions in an academic year at Delta are Spring (May through June) and Summer (July through August).

**Service Credits:** Credits assigned to non-credit courses. These credits are not applicable to a Delta Associate degree or Certificate and are not transferable to other colleges.

**Sophomore:** Academic student who has earned 30 or more credits.

**Suspension:** Being required to leave Delta College due to a very low grade point average or unacceptable conduct.

**Transcript:** Your official Delta College record listing all academic courses attempted with grades, credits, and grade points; all transfer credits accepted; and credit awarded by examination or advanced placement; and your cumulative GPA.

**Transfer:** The official process of moving from attendance at one college or university to attendance at another college or university.

**Tuition:** The money you pay the college for instruction and services. A dollar amount is assigned to each credit. Tuition is determined by multiplying the dollar amount by the number of credits for which you are registering. In-District, Out-of-District, and Out-of-State tuition rates are different. See Course Guide booklet for current tuition rates.

**Withdrawal:** Dropping all of your courses and leaving Delta College. Official withdrawal must be done through the Registrar's Office.



# Who to Contact

Area Code is 989

Call Toll-Free from ..... Bay City/Saginaw 686 + Extension  
Midland/Auburn 495-4000, Birch Run/Frankenmuth/Reese/Vassar 758-3400

Questions About:	Who to Contact (e-mail)	Office	Extension
Academic Advising .....	Counseling/Advising (counsel@delta.edu) .....	D102 .....	9330
Academic Standards .....	Registrar's Office (regis@delta.edu) .....	D101 .....	9305
Academic Testing .....	LLIC (acadtest@delta.edu) .....	A110 .....	9182
Adding Courses .....	Registrar's Office (regis@delta.edu) .....	B100 .....	9305
Adjunct Faculty Support .....	Instructional Support Services (iss@delta.edu) .....	J102 .....	9515
Admissions .....	Admissions (admit@delta.edu) .....	D101 .....	9092
Affirmative Action .....	Equity Office (equityoffice@delta.edu) .....	J101 .....	9547
African-American Services .....	Student Diversity & Inclusion (multicultural@delta.edu) .....	A003 .....	9865
Apprenticeship/Skilled Trades .....	Skilled Trades (skilledtrades@delta.edu) .....	M128 .....	9476
Assessment/Testing Services .....	Assessment/Testing (assess@delta.edu) .....	D101 .....	9338
Athletics, Intercollegiate .....	Athletic Office (gregorymallek@delta.edu) .....	D102 .....	9477
Bookstore .....	Bookstore (bookstore@delta.edu) .....	Courtyard Level - Food Court .....	9030
Bridge Program for Underprepared Students .....	Bridge Program (bridge@delta.edu) .....	D102 .....	9163
Broadcasting .....	Broadcasting (wdcq@delta.edu, wucx@delta.edu) .....	A034 .....	9362
Bus Schedule (route information) .....	Bay Metro (www.baymetro.com) .....	Bay City .....	894-2900
Career Information .....	Saginaw Transit-STARs (www.saginaw-stars.com) .....	Saginaw .....	907-4000b
Caution Status .....	Career Services (counsel@delta.edu) .....	D132 .....	9072
Clubs & Organizations .....	Registrar's Office (regis@delta.edu) .....	B100 .....	9305
American Marketing Assns. Collegiate Chapter .....	Student Engagement Office (slgeorge@delta.edu) .....	A003-WCL .....	9865
Black Student Union .....	Dawn Fairchild(dawnfairchild@delta.edu) .....	G110 .....	9220
.....	Carl Ruth(ceruth@delta.edu) .....	D102 .....	9667
.....	diedra knox-Co Advisor .....	D161 .....	9049
.....	Angela Sinclair-Co-Advisor .....	B101 .....	9463
Delta Baseball Club .....	Larry Ramseyer (larryramseyer@delta.edu) .....	B162 .....	9234
Delta Bowling Club .....	Michael Wiltse(michaelwiltse@delta.edu) .....	N102 .....	9110
Delta College Community Outreach Club .....	Teresa Stitt(tfstitt@delta.edu) .....	B153 .....	9422
Delta Democrats .....	Kim Klein (kimberlyklein@delta.edu) .....	G123 .....	9192
Delta Dental Assisting Student Society .....	Pam Smith (pamelasmith@delta.edu) .....	F43 .....	9565
Delta Dodgeball Club .....	Dr. Tim Clarey (tclarey@delta.edu) .....	D165 .....	9252
Delta Drama Club .....	Judy Gonzales (jgonza@delta.edu) .....	S254 .....	9535
Delta Epsilon Chi (DEX) .....	Greg Hubner(gregoryhubner@delta.edu) .....	A074 .....	9043
Delta Golf Team .....	Williams Russel(williamrussel@delta.edu) .....	M123 .....	9498
Delta Hockey Club .....	Paula Cornell (paulacornell@delta.edu) .....	F224 .....	9421
Delta Night Garden .....	Joadi Ann Stevenson (jodiannstevenson@delta.edu) .....	S015 .....	9174
Delta College Student Nurses Association .....	Janet Massoglia (janetmassoglia@delta.edu) .....	F219 .....	9280
.....	Wanda Zenzen(wandazenzen@delta.edu) .....	F218 .....	9193
Delta Tutorial Association .....	Elizabeth Dewey (ebdewey@delta.edu) .....	A118 .....	9587
Honors Leadership Board .....	Honors Office -Julia Fogarty(jtfogart@delta.edu) .....	A008-WCL .....	9617
Imagine .....	Charissa Urbano(cmurbano@delta.edu) .....	FCTE .....	9791
.....	Joseph Lewis(josephlewis2@delta.edu) .....	S020 .....	9376
Inter-Varsity Christian Fellowship .....	Eric Wiesenauer(ericwiesenauer@delta.edu) .....	G205 .....	9761
Phi Theta Kappa - PTK .....	Jeff Sorrels (jeffreysorrels@delta.edu) .....	A003-WCL .....	9540
Physical Therapist Assistant Student Organization .....	Mike Spitz (amspitz@delta.edu) .....	P172 .....	9478
Pioneer Volunteers .....	Gordon Beedle(gordonbeedle@delta.edu) .....	A008-WCL .....	9474
Productions Club .....	Jim Gleason(jamesgleason@delta.edu) .....	A056 .....	9473
Radiography Club .....	Cindy Kramer Reszke (cindyreszke@delta.edu) .....	F057 .....	9430
Speech & Debate Team .....	Beth Heyart (bethHeyart@delta.edu) .....	S268 .....	9248
.....	Jeff Sorrels (jeffreysorrels@delta.edu) .....	S250 .....	9485
S.A.D.H.A. 2010-Student Members of the Amer .....	Toby Haske (tobyhaske@delta.edu) .....	F51 .....	9497
S.A.D.H.A. 2011 .....	Kathy Taylor(kathleentaylor@delta.edu) .....	F39 .....	9483
Sigma Phi Alpha-Beta Beta Tau .....	Virginia Przygochi (vlprzygo@delta.edu) .....	B130 .....	9276
S.O.H.L - Society of Hispanic Leaders .....	Raymond Gutierrez (rmgutier@delta.edu) .....	A003-WCL .....	9117
Student Senators .....	Ski VanderLaan (skivanderlaan@delta.edu) .....	A077 .....	9419
Unison .....	Spring Schafer(springschafer@delta.edu) .....	S218 .....	9406
Women's Alliance .....	Liz Ullrich (elizabethullrich@delta.edu) .....	G114 .....	9103
Collegiate (Student Newspaper) .....	Collegiate Office (collegiate@delta.edu) .....	A004-WCL .....	9337
Computer Lab .....	LLIC (library@delta.edu) .....	A110 .....	9513
Conduct, Rules & Regulations .....	Vice President of Student Services .....	B134 .....	9339
Conferences & Special Events .....	Business Services (busoff@delta.edu) .....	B116 .....	9036
Cooperative Education .....	Coop & Exp. Learning (coop@delta.edu) .....	A008-WCL .....	9474
Corporate Services .....	Corporate Services (info@corpserv.delta.edu) .....	H Wing .....	3602
Counseling/Advising/Career Services .....	Counseling/Advising (counsel@delta.edu) .....	D102 .....	9330
Dental Clinic .....	Dental Clinic .....	F140 .....	9469
Disability Services .....	Disability Services (disabilityservices@delta.edu) .....	D106 .....	9322
Dismissal Status .....	Registrar's Office (regis@delta.edu) .....	D100 .....	9305
Disputed Grades .....	Grade Ombudsman (kjtreadway@delta.edu) .....	A118 .....	9275
Dropping Courses .....	Registrar's Office (regis@delta.edu) .....	B100 .....	9305
eLearning .....	eLearning (elearning@delta.edu) .....	J102 .....	9088/9580

Questions About:	Who to Contact (e-mail)	Office	Extension
Emergencies, Illness, or Injury	Public Safety & Training (cops@delta.edu)	N102	9111
Non-Emergency Calls	Public Safety & Training (cops@delta.edu)	N102	9113
Employment (Student)	Career Services	D132	9072
Equite Compliance	Equity Office(equityoffice@delta.edu)	J101	9512
Fantastics	Youth Development (fantast@delta.edu)	D101	9185
FERPA	Registrar's Office (regis@delta.edu)	B100	9449
Finances (student)	Student Finance Office (finance@delta.edu)	B100	9333
Financial Aid	Financial Aid (finaid@delta.edu)	D101	9080
Fire Science /EMS	Coordinator (firesci@delta.edu)	M128	9020
Fitness and Recreation	Fitness & Recreation Center (fitness@delta.edu)	P112	9026
Food Services	Food Services (foodservices@delta.edu)	N020	9035
Foundation Office	Foundation Office (foundation@delta.edu)	A013	9224
Global Awareness (International/Intercultural)	Coop & Exp. Learning (coop@delta.edu)	A008-WCL	9474
Grade Ombudsman	Karen Treadway (kgtreadw@delta.edu)	A118	9275
Grades	Registrar's Office (regis@delta.edu)	B100	9305
Graduation, Requirements & Applications	Registrar's Office (regis@delta.edu)	B100	9305
Leadership Board	Student Diversity & Inclusion (multicultural@delta.edu)	A003-WCL	9865
Honors Program /Honors Leadership Board	Honors Office (honors@delta.edu)	A008-WCL	9091
Incomplete Grades	Course Instructor	—	—
Institutional Advancement	Executive Director	B156	9225
Intercollegiate Sports	Athletics Director (gregorymallak@delta.edu)	D102	9477
International/Intercultural Programs	Coop & Exp. Learning (coop@delta.edu)	A008-WCL	9474
Internet Courses	eLearning (elearning@delta.edu)	J102	9088
Internships	Coop & Exp. Learning (coop@delta.edu)	A008-WCL	9474
Intramural Sports	Athletic Director (gregorymallak@delta.edu)	D102	9477
Jobs, Part/Full-Time (Student)	Career Services (jobplace@delta.edu)	D132	9074
Judicial/Due Process	Dean of Student & Educational Services	B134	9512
Library Learning Information Center (LLIC)	Library (library@delta.edu)	A110	9560
	Academic Testing Center (acadtest@delta.edu)	A110	9182
	Computer lab		
	Teaching Learning Center (tlc@delta.edu)	A110	9314
LifeLong Learning Center	(lifelonglearning@delta.edu)	H-Wing	9444
Lost and Found	Public Safety & Training (cops@delta.edu)	N102	9113
MI Small Business & Tech Development	MI Small Bus & Tech Devel Center (sbtcdc @delta.edu)	H Wing	9597
Midland Center (See Maps in this section)	Midland Center (laholoman@delta.edu)	Midland	495-4010
Multi-Cultural Services	Student Diversity & Inclusion (multicultural@delta.edu)	D101	9185
Orientation for New Students	Admissions (admit@delta.edu)	D101	9093
Parking	Public Safety (cops@delta.edu)	N102	9113
Payment Plan (Tuition)	Student Finance Office (finance@delta.edu)	B100	9333
Personal/Career Advising	Counseling/Advising (counsel@delta.edu)	D102	9330
Planetarium & Learning Center (See Maps in this section)	Planetarium (planet@delta.edu)	Bay City	667-2260
Police			
Campus Security	Public Safety & Training (cops@delta.edu)	N102	9113
Police Academy	Police Academy	N102	9176
Possible Dream Program	Youth Development (posdream@delta.edu)	A003-WCL	9091
Probation Status	Registrar's Office (regis@delta.edu)	B100	9305
Public Information	Marketing & Public Information (leannegovitz@delta.edu)	B155	9490
Records (Student)	Registrar's Office (regis@delta.edu)	B100	9305
Recreation	Fitness & Recreation Center (fitness@delta.edu)	P112	9026
Recycling	Facilities Management (facilities@delta.edu)	B163	9209
Registration	Registrar's Office (regis@delta.edu)	B100	9305
Residency Qualifications	Registrar's Office (regis@delta.edu)	B100	9305
Ricker Center (See Maps in this section)	Ricker Center	Saginaw	752-7500
Rights, Student	Dean of Student and Educational Services	B134	9512
Room Scheduling	Scheduling Office (roomscheduling@delta.edu)	B132	9494
Sailing School	Lifelong Learning(lifelonglearning@delta.edu)	H-Wing	9444
Security, Campus	Public Safety & Training (cops@delta.edu)	N102	9113
Service-Learning	Coop & Exp. Learning (coop@delta.edu)	A008-WCL	9474
Sexual Harassment	Equity Officer (equityoffice@delta.edu)	J101	9512
Skilled Trades, Apprenticeship	Manager (skilledtrades@delta.edu)	M128	9476
Small Business	MI Small Bus & Tech Devel Center (sbtcdc @delta.edu)	H Wing	9597
Sports (Intramural)	Athletic Director (gregorymallak@delta.edu)	D124	9477
Teaching/Learning Center Services	LLIC Teaching/Learning Center (tlc@delta.edu)	A110	9314
Textbooks & Class Supplies	Bookstore (bookstore@delta.edu)	Courtyard Level - Food Court	9030
Traffic Regulations & Violations	Public Safety & Training (cops@delta.edu)	N102	9113
Transcript Requests	Registrar's Office (regis@delta.edu)	B100	9305
Transfer Credit Acceptance	Registrar's Office (regis@delta.edu)	B100	9305
Transfer to Another College	Counseling/Advising (counsel@delta.edu)	D102	9330
Transferability of Delta Courses	Counseling/Advising (counsel@delta.edu)	D102	9330
Tutoring	LLIC Teaching/Learning Center (tlc@delta.edu)	A110	9314
Veterans Benefits, Certification & Information	Veterans Services Office (vets@delta.edu)	B100	9465
Volunteer Services	Coop & Exp. Learning (coop@delta.edu)	A008-WCL	9474
Withdrawal from College	Registrar's Office (regis@delta.edu)	B100	9305

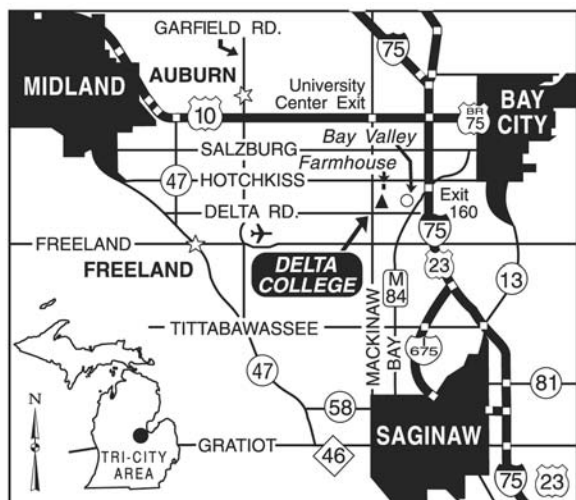
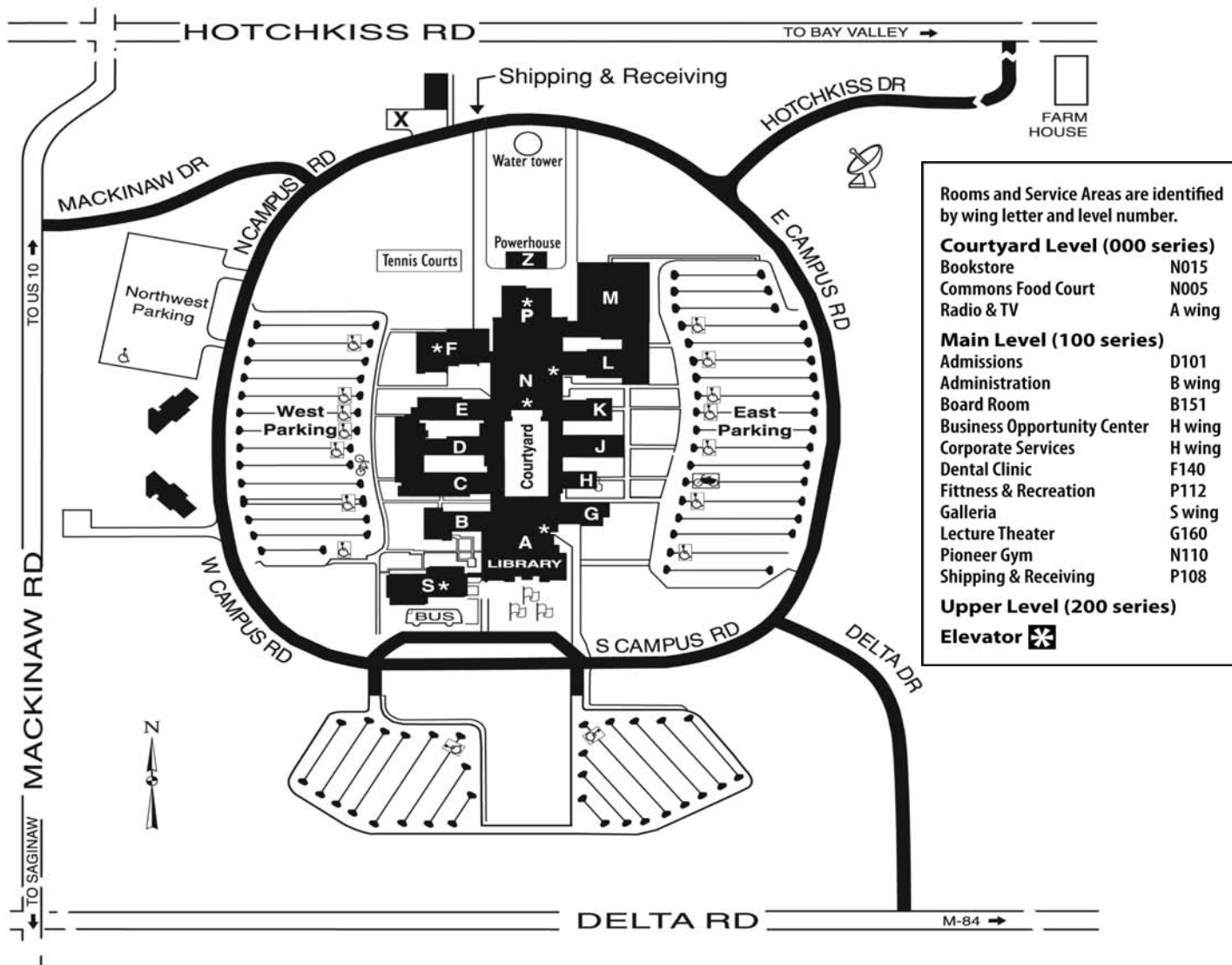
WCL = West Courtyard Level



On the Web: [www.delta.edu/atoz](http://www.delta.edu/atoz)



# Delta College Main Campus

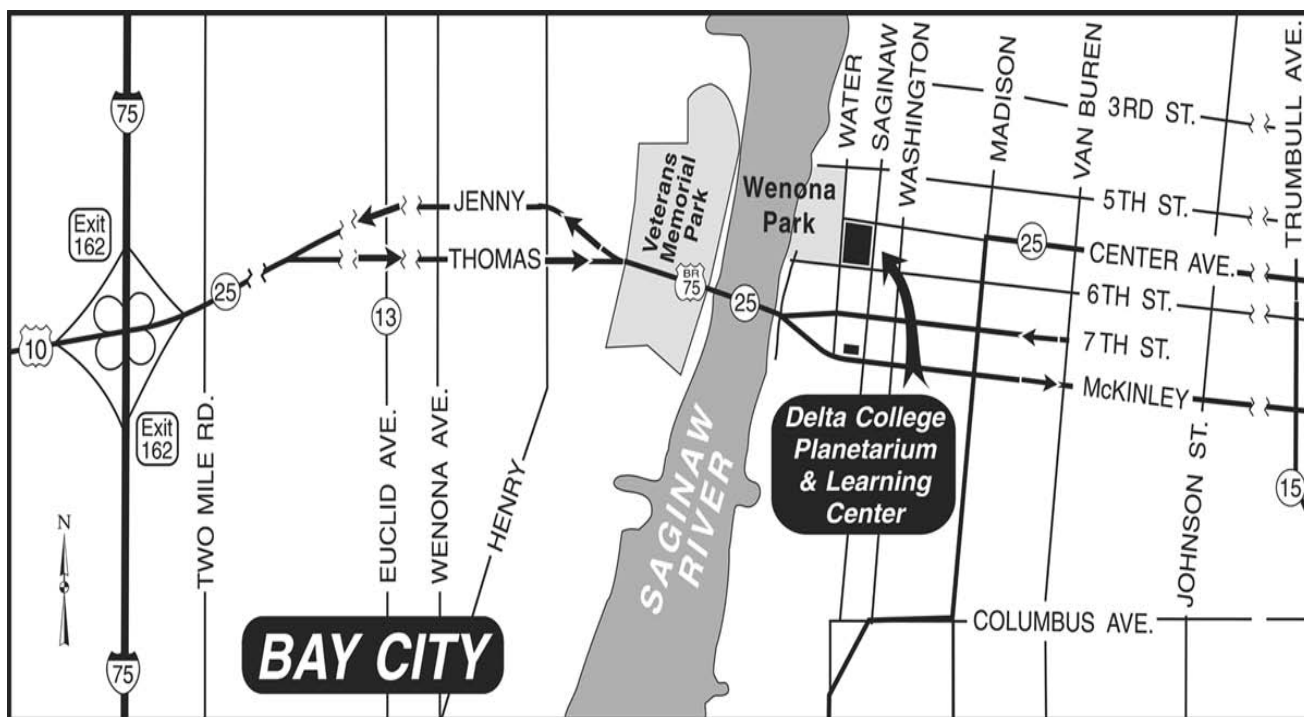


## From I-75

Take exit 160. Turn south onto M 84. Go approximately ¼ mile to the second traffic light and turn west onto Delta Road. Travel 1¼ miles and the College is on the right.

## From US-10

Exit south at the Mackinaw Road exit onto Mackinaw Road. Travel about 2¼ miles, past the light at the Hotchkiss Road intersection. College entrance is on the left.



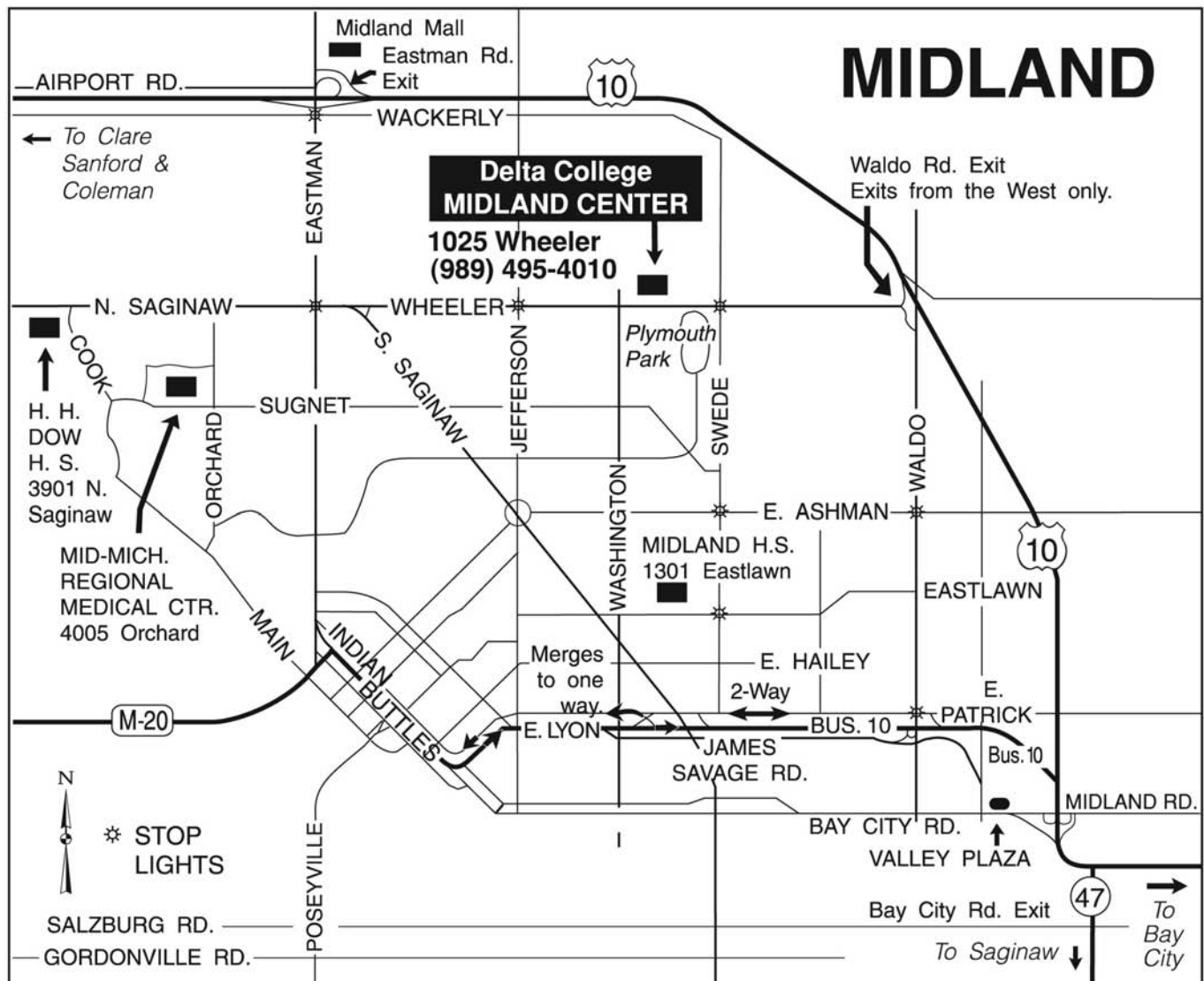
## Bay City Planetarium & Learning Center

100 Center Avenue

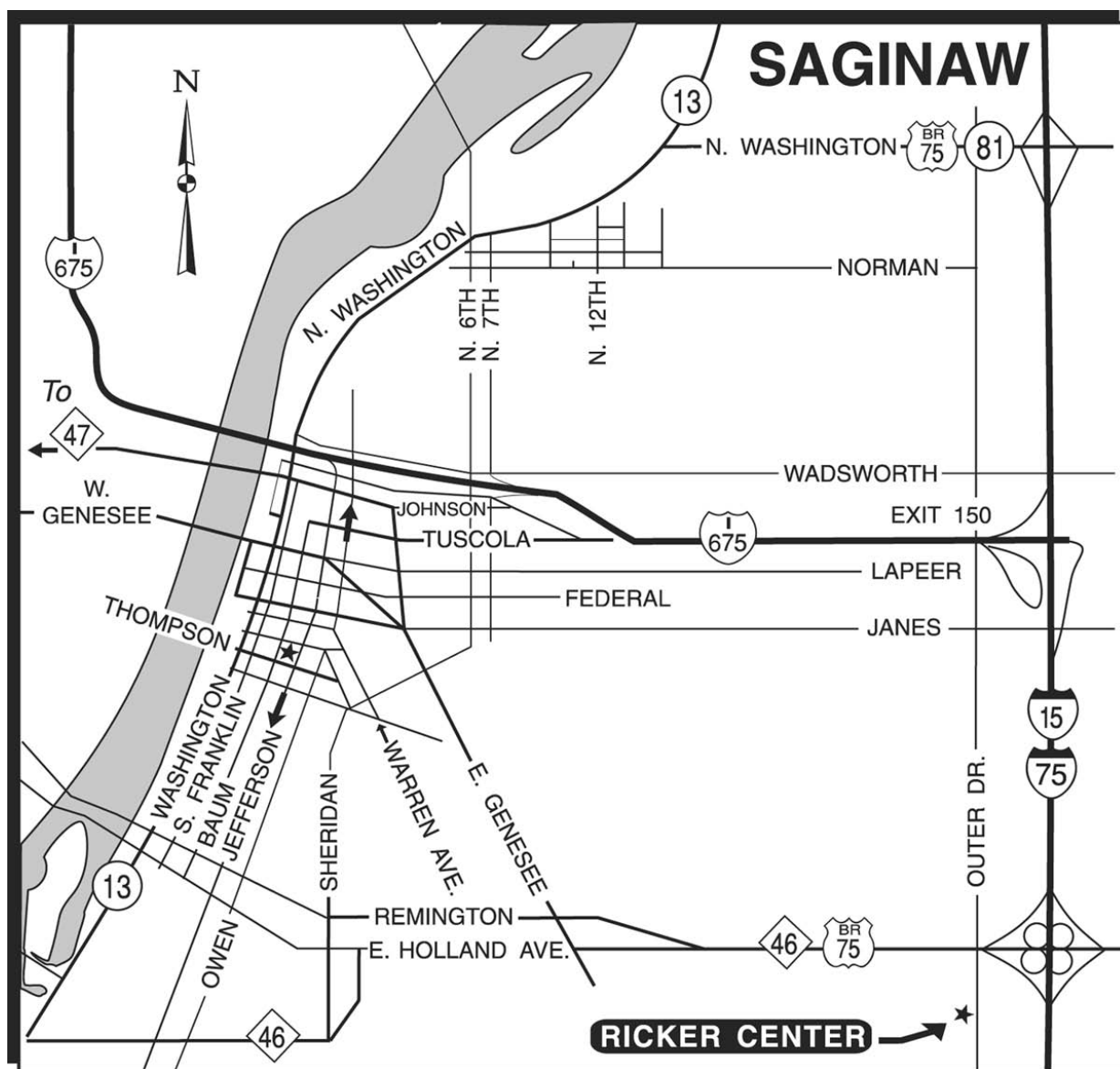
Bay City MI 48708

Phone: (989) 667-2260

Fax: (989) 667-2266



**Midland Center**  
**1025 East Wheeler Street**  
**Midland MI**  
**Phone: (989) 495-4010**  
**Fax: (989) 495-4018**



## Saginaw Ricker Center

1925 S. Outer Drive

Saginaw MI 48601

Phone: (989) 752-7500

Fax: (989) 752-9762



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